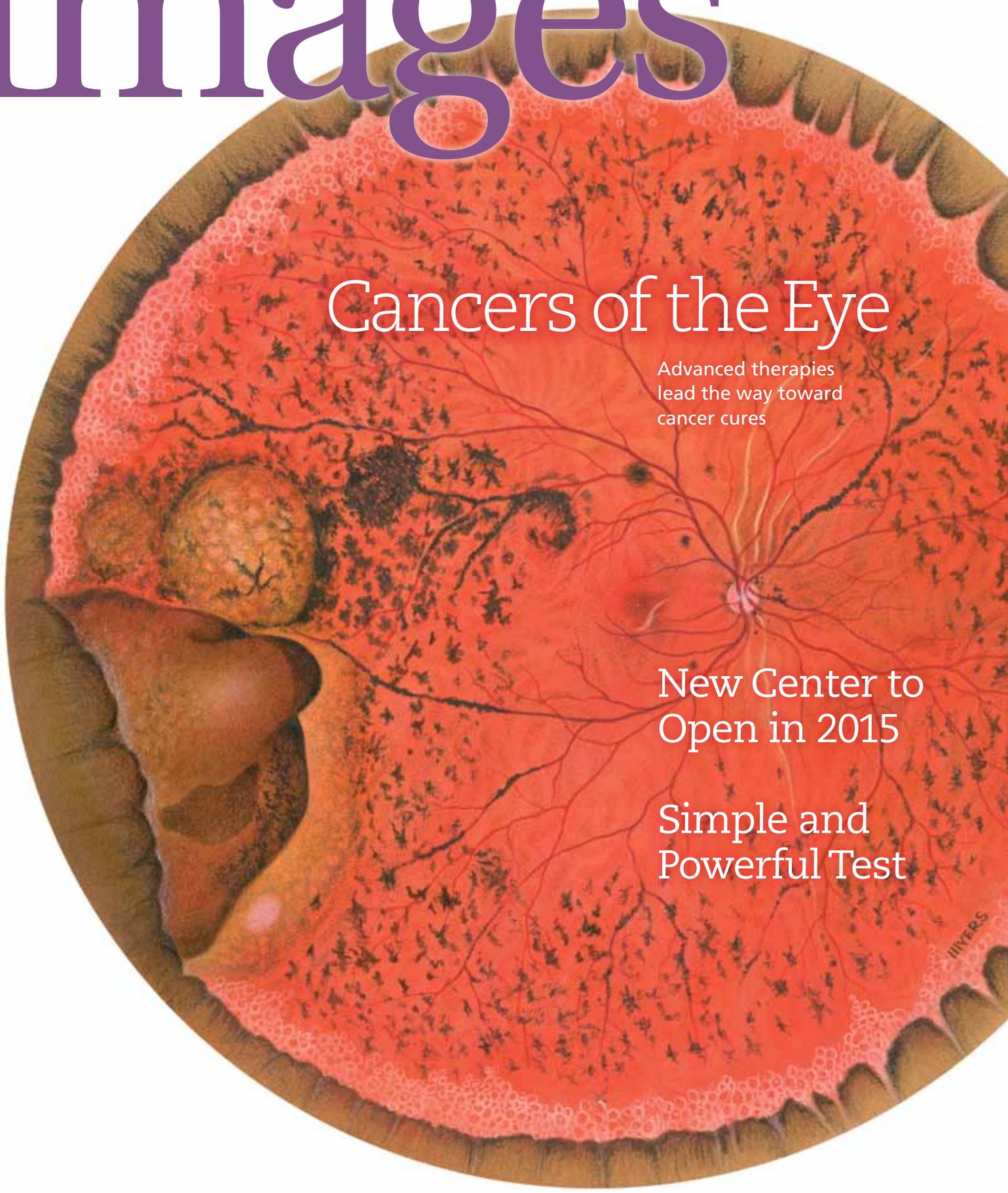
Bascom Palmer Eye Institute® | University of Miami Health System

2014 ISSUE 1

Images



Cancers of the Eye

Advanced therapies lead the way toward cancer cures

New Center to Open in 2015

Simple and Powerful Test

Bascom Palmer Eye Institute's mission is to enhance the quality of life by improving sight, preventing blindness, and advancing ophthalmic knowledge through compassionate patient care and innovative vision research.

FEATURE

Cancers of the Eye

Advanced therapies lead the way toward cancer cures

On the cover
A medical illustration by J. McGuinness Myers depicting the funduscopic appearance of diffuse pigment deposition and a peripheral malignant melanoma arising from the ciliary body. More about the illustrator on page 25.

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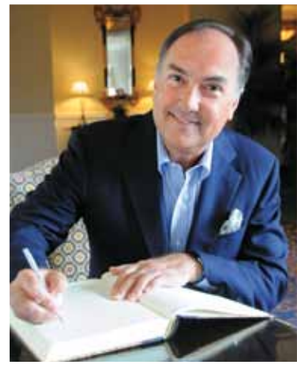
Dear Friends and Colleagues:

Bascom Palmer Eye Institute stands on the frontiers of ophthalmology, advancing the research that leads to better clinical care and improved patient outcomes. In the past decade, our physician-scientists have made notable contributions in fields as diverse as age-related macular degeneration, ocular infections, corneal transplantation and ocular oncology—the focus of this issue of *Images*.

Now, we are exploring genomics and other new ways of preventing the components of the eye from breaking down rather than making repairs through surgery. For instance, if a patient's genetic profile indicates that she is likely to develop macular degeneration at the age of 60, can we take steps at the age of 30 to safeguard her vision later in life?



We are also making steady progress in stem cell research, which has tremendous possibilities for regenerative medicine. Working in collaboration with other University of Miami Miller School of Medicine programs, Bascom Palmer's researchers are exploring how transplanting stem cells and other cellular compounds may facilitate the regeneration of diseased tissues of the eye. I believe this approach has incredible potential to restore vision and prevent blindness without surgery. Just imagine being able to see through your own self-regenerating cornea rather than a donor or prosthetic one.

Our ophthalmologists are also studying cell-based therapies that could improve the functioning of neural pathways in patients with conditions like glaucoma, macular degeneration and retinal diseases. These approaches already show great promise, and we look forward to participating in clinical trials in the not-too-distant future.

As we look forward to the coming year, I feel fortunate to be able to support the work of our world-class researchers, clinicians and educators, whose work makes such a difference in the lives of our patients.

Sincerely,

Eduardo C. Alfonso, M.D.
Kathleen and Stanley J. Glaser Chair in Ophthalmology
Chairman, Bascom Palmer Eye Institute

Saving Lives
Saving Vision

Bascom Palmer's multidisciplinary team of experts is highly skilled and experienced in treating every type of eye cancer. While most eye cancers are rare, they require treatment at a center providing the most advanced therapies.

When Nicholas Thorne developed an itch in his left eye last spring, he wasn't overly concerned. But then the 52-year-old information technology manager for Canon North America in Boca Raton started seeing a flashing light in his peripheral vision, a common sign of a detached retina.

After an ultrasound scan showed a large mass behind his retina, Thorne quickly made an appointment with a specialist who identified the problem as an ocular melanoma. "He told me my eye would have to be removed in order to keep the cancer from spreading. I told him I needed both my eyes for my livelihood," Thorne says.

Rather than undergo surgery immediately, Thorne sought a second opinion and was referred to J. William Harbour, M.D., professor of ophthalmology and holder of the Mark J. Daily, M.D. Endowed Chair at Bascom Palmer. Harbour is one of the few physicians in the country who specialize exclusively in the diagnosis and treatment of eye cancer in adults and children.

"Within two days I was at Bascom Palmer, and Dr. Harbour explained how the cancer could be treated with radiation therapy without removing my eye," Thorne says. After mapping the tumor in 3-D, Harbour and Arnold M. Markoe, M.D., professor of radiation oncology at the University of Miami's Sylvester Comprehensive Cancer Center, inserted a radioactive disc, called a plaque, to deliver radiation directly to the tumor. Four days later, Harbour removed the plaque and Thorne was able to return to his normal activities. Today, Thorne's vision has returned to nearly normal and his tumor has shrunk to almost half the size it was before surgery. "I can't say enough about Dr. Harbour and his team," Thorne says. "I feel fortunate to have been seen so quickly, have received such excellent care and, most importantly, to be able to retain my vision."

SKILL, EXPERIENCE AND EXPERTISE

Drawing on Bascom Palmer's resources—including advanced imaging equipment and one of the world's top eye pathology laboratories—the Institute's clinicians and researchers have been advancing the fight against eye cancer for more than 50 years.

As the director of Bascom Palmer's ocular oncology service, Harbour leads an integrated team of internationally recognized leaders in the care of eye cancers. "Bascom Palmer is known as a premier international destination for adult and pediatric patients facing life—and vision—threatening eye tumors," he says.

Bascom Palmer's physicians treat cancers that originate inside the eyeball, on the surface of the eye, on eyelids and in the eye socket. Doctors also treat secondary cancers that start elsewhere in the body, such as the breast or lung, and then spread to the eye.

Dr. J. William Harbour

"Our goal is to be the first ocular oncology center in the world to develop a suite of diagnostic, prognostic and therapeutic technologies for each major form of eye cancer so that patients are treated in a customized manner tailored to meet their individual and specific needs," Harbour adds. "Bascom Palmer is the ideal place to fulfill this vision, because of our large volume of patients, the wide variety of eye cancers that we treat, and our scientific expertise to rapidly turn new findings into improved patient care."

Treating eye cancer often requires a multidisciplinary approach. Bascom Palmer physicians enjoy a strong working relationship with physicians and surgeons throughout the University of Miami Health System, including Sylvester Comprehensive Cancer Center.

Harbour notes that Bascom Palmer is involved in numerous studies to evaluate newly developed therapies for eye cancer. "We believe that it is important to participate in clinical studies, not only those that we initiate here at Bascom Palmer, but also those in collaboration with other national and international centers."

Treating eye cancer often requires a multidisciplinary approach. Bascom Palmer physicians enjoy a strong working relationship with physicians and surgeons throughout the University of Miami Health System, including Sylvester Comprehensive Cancer Center.

"We are an integral part of the cancer center, collaborating with specialists in radiation oncology, medical oncology, pediatric oncology, neurointerventional oncology and other fields," says Harbour. "That provides our patients with access to the most advanced cancer treatment techniques available. Having everything right here on our medical school campus is a major advantage for patients."

Bascom Palmer's ocular oncologists also collaborate with the department of genetics to better understand the development and potential treatment of melanomas and other eye cancers. "We are discovering molecular biomarkers that assist our clinicians in monitoring the cancer over time, allowing us to be more or less aggressive in our treatment according to a patient's needs," Harbour explains. "For example, our team developed a genetic test for ocular melanoma that is now used throughout the United States and elsewhere."

COLLABORATION AND COMMUNICATION ARE KEY

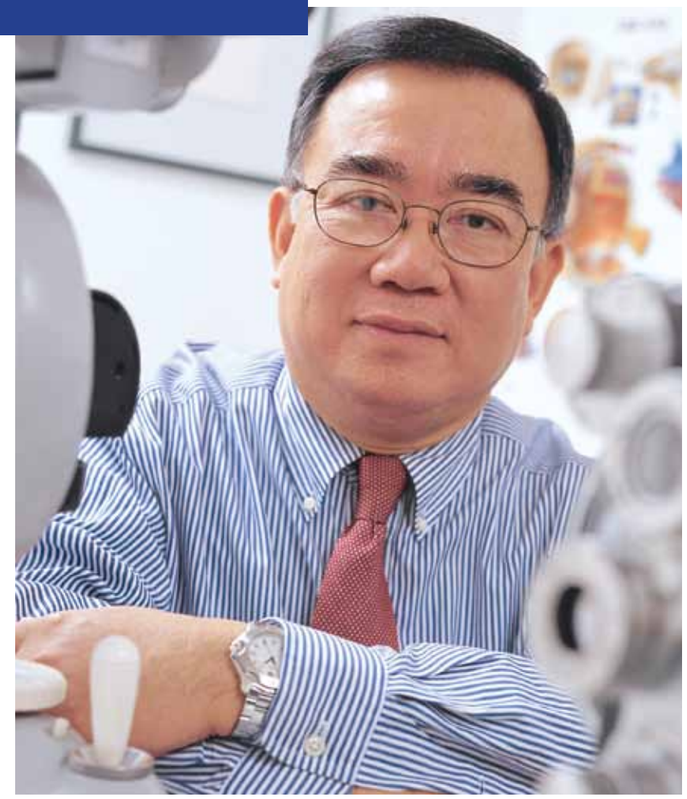
Most eye cancers are relatively rare. The American Cancer Society estimates that there will be approximately 2,800 new cases of eye cancers this year. For instance, retinoblastoma, a rare type of eye cancer that develops in the retina typically before the age of five, affects about 325 children annually in North America. On the other hand, benign tumors inside the eye are common. The most common primary ocular tumors in adults are uveal melanoma and lymphoma. The challenge is to determine which tumors are malignant and need immediate treatment, which tumors are benign and can be safely observed, and which "tumors" are not tumors at all but lesions such as a blood clot in the eye.

"There are special challenges in treating eye and orbital cancers," says David T. Tse, M.D., professor of ophthalmology and holder of the Dr. Nasser Ibrahim Al-Rashid Chair in Ophthalmic Plastic, Orbital Surgery and Oncology. "Some kinds of eye cancers are difficult to diagnose, while others occur only rarely. Because of our team's shared expertise and experience, we often find a solution to help patients with common or rare cancers. We are one of the nation's leading ophthalmic cancer programs for a broad spectrum of tumors affecting the eye and its surrounding areas."

Bascom Palmer's multidisciplinary team includes oculoplastic surgeons trained to remove eyelid and orbital tumors, a corneal surgeon trained to manage cancers arising from the ocular surface, and a vitreoretinal surgeon trained to treat tumors inside the eye. All team members are working to preserve ocular function, vision and appearance.

By developing better diagnostic tools, innovative treatments and new surgical procedures, Bascom Palmer's ocular oncologists are saving lives, saving eyes and saving vision. "Today, I believe we are the ophthalmic equivalent of the U.S. Navy SEALs, taking on the most difficult missions in our field," says Tse. "We have subspecialists for all forms of eye cancer, so patients can be seen by the ophthalmologist with the best training and most experience to manage their site-specific condition."

"Today, I believe we are the ophthalmic equivalent of the U.S. Navy SEALs, taking on the most difficult missions in our field." —*David T. Tse, M.D.*

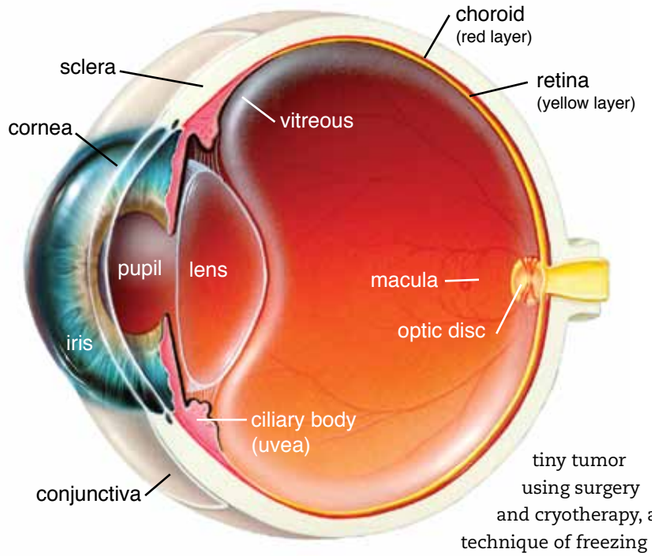


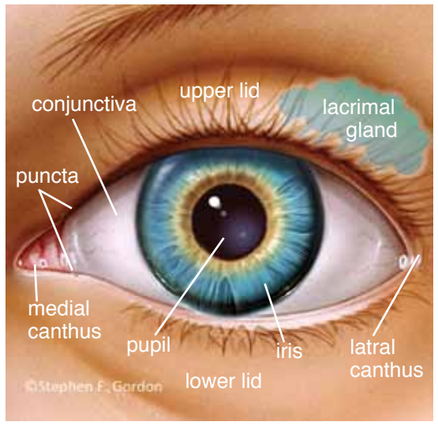
Dr. David Tse

CANCERS ON THE SURFACE OF THE EYE

Susan Stallings had no idea that a tiny black spot in her eye—no larger than the point of a pencil—could have been fatal. "I thought I had dirt in my eye and my optometrist thought it was only a freckle," says Stallings, a specialist in repairing medical equipment who lives on Florida's Space Coast. She then went to her local ophthalmologist who thought the spot looked suspicious and referred her to Carol L. Karp, M.D., professor of ophthalmology at Bascom Palmer. "He told me the spot could be melanoma and getting immediate treatment could be a matter of life and death," Stallings says.

At Bascom Palmer, Karp identified the black spot as conjunctival melanoma—one of the least common eye cancers. Karp successfully removed the





tiny tumor using surgery and cryotherapy, a technique of freezing and thawing cells, as well as "no-touch" techniques to keep the cancer cells from spreading. "I'm thrilled with the scientific advances at Bascom Palmer," says Stallings. "With advances in genetic therapy, surgery and new drug 'cocktails,' there are many new options for eye cancer patients like me."

Melanoma, one of the most deadly forms of cancer, can arise on the eye's surface (conjunctival melanoma), the skin of the eyelid (cutaneous), or form inside the eye (uveal or choroidal melanoma). Prompt treatment is essential to prevent the cancer from spreading to other parts of the body. However, melanoma is just one cancer that grows on the outer surface of the eye. In her practice, Karp sees hundreds of patients a year with squamous cell carcinoma, malignant melanoma, lymphomas and corneal intraepithelial neoplasia.

"Many people are surprised to find that cancers of the skin can also appear on the surface of the eye," explains Karp. "The ocular surface is exposed to ultraviolet (UV) light all day. The cornea is like a car's windshield, letting in the sun's rays. While we cannot use sunscreen to protect our eyes, we should always wear sunglasses with a high UV rating along with a hat to protect against the harmful effect of too much sun exposure."

The ocular surface is exposed to ultraviolet light all day. The cornea is like a car's windshield, letting in the sun's rays. While we cannot use sunscreen to protect our eyes, we should always wear sunglasses with a high UV rating along with a hat to protect against the harmful effect of too much sun exposure.

Karp is an international leader in the current trend of using topical medicines (eye drops) as an alternative to surgery for ocular surface cancers. In the last 10 years, she has seen an increase of healthy patients with these squamous cancers on the eye, which she believes is likely due to excess sun exposure.

That discovery led Karp to become interested in interferon, a chemical produced by the body's white cells to fight infections and viruses. Since interferon was already used to treat leukemia, malignant melanoma and cervical cancer, Karp felt it might be effective for conjunctival squamous carcinomas on the eye's surface. "I designed and implemented a clinical trial and the results were dramatic from the very first patient," she says. "Since then, we have been able to cure many patients with topical chemotherapy rather than surgery."

One of the advantages of using drops of medication is that the entire surface of the eye can be treated. The medication disperses and kills cancerous cells as well as abnormal cells that have not yet grown into visible tumors. It also avoids the discomfort and side effects that may result from surgery.

In surgical cases, Karp uses a new approach to prevent scarring by placing an amniotic membrane over the surface of the eye to help it heal. "This membrane is part of the placenta and though this initially sounds odd to patients, this tissue has properties that allow for 'scarless' healing."

"We have a large number of patients with these tumors and we are analyzing the database to compare the outcomes. That will help us better understand how to target and individualize our treatments."

—*Carol L. Karp, M.D.*

Karp is now studying whether there is any difference in recurrence rates between patients treated with medication or with surgery. "We have a large number of patients with these tumors and we are analyzing the database to compare the outcomes," she adds. "That will help us better understand how to target and individualize our treatments."

Many eye cancer patients benefit from Bascom Palmer's ophthalmic biophysics center. Jinhua (Jay) Wang, M.D., Ph.D., associate professor of ophthalmology, and one of the world's foremost ocular imaging researchers, developed a custom-built imaging system that takes "optical biopsies" of tumors or lesions on the surface of the eye. This instrument, based on optical coherency tomography (OCT), provides ultra-high-resolution images 2-3 microns in size, thus sparing many patients from undergoing a surgical biopsy.

The special OCT scans, performed with equipment not available elsewhere in the world, can help determine the patient's diagnosis and treatment. Karp adds, "This is really a revolution in diagnosing and managing cancers on the surface of the eye."

CANCERS INSIDE THE EYE

Intraocular lymphoma is a cancer of the white blood cells or "lymphocytes" that can arise within the eye or spread to the eye from the brain or other organs. This cancer is often mistaken for a benign inflammation of the eye, and can be very difficult to diagnose. It is critical for patients suspected of having this disease to be evaluated by an expert so appropriate and comprehensive testing can be performed.

"Intraocular lymphoma is a rare disease," says Harbour. "However, lymphomas have increased tenfold in the past decade. By using a coordinated approach with pathologists, radiation oncologists and lymphoma specialists, we have been able to keep patients alive and retain their vision in many cases."

Dr. Carol Karp

Patient with squamous tumor of the conjunctiva before treatment.

Same patient after three months of interferon eye drops showing tumor is gone.

Bascom Palmer is an international referral center for children with retinoblastoma. Children with retinoblastoma (RB) typically have a pupil that appears white, rather than red, when a light is shone into the pupil. Where healthy eyes will reflect a red spot ("red eye") in a photograph taken with a flash, the eyes of a child with RB will often

When looking at a photograph of a child, "red-eye" is good. This simulated image shows a child's eye that appears to have a white center. If this effect is noticed in photographs, request a pediatric ophthalmic examination immediately.

reflect a white spot, or leukocoria. The second most common sign of RB is crossed eyes or eyes that do not point in the same direction.

Harbour leads a multidisciplinary retinoblastoma team that includes pediatric oncologists, neurointerventional surgeons, clinical geneticists and other experts to provide state-of-the-art treatment for these children. "Retinoblastoma is almost always curable when it is diagnosed early and treated promptly," says Harbour, a widely recognized expert in treating retinoblastoma. "But if not treated promptly, this cancer can spread to other parts of the body and be life-threatening."

CANCERS OUTSIDE THE EYE

More than 25 years ago, new father Steve Downey came to Bascom Palmer with a rare orbital tumor called adenoid cystic carcinoma of the lacrimal (or tear) gland—a condition with a very high mortality rate. "When he came in, he was only 21 years old," says Tse. "Given the nature of his tumor, if we were to follow the conventional treatment regimen, he would have had only a 20 percent chance to live 10 years. I was able to offer him a new form of treatment in an effort to improve survival."

Tse is credited with developing a major advance in the treatment of lethal orbital cancer. This technique, called intra-arterial cytoreductive chemotherapy, involves infusing a high concentration of chemotherapy into the artery that supplies the lacrimal gland. Retinoblastoma patients also benefit from this approach which allows chemotherapy to be delivered directly into the artery that goes to the eye. Twenty-five years after his treatment, Downey is still cancer-free. "Short-term and long-term, Dr. Tse saved my life," he says.

In his many years as a researcher, Tse has focused on turning laboratory discoveries into effective methods of treatment, a process called translational research. To support his research, Nasser Al-Rashid, Ph.D., founder and chairman of Rashid Engineering in Riyadh, Saudi Arabia, donated $10 million to establish The Dr. Nasser Ibrahim Al-Rashid Orbital Vision Research Center at Bascom Palmer. *(See related story on page 32.)*

"The mission of the Center is to find novel treatments for orbital diseases with significant morbidity and mortality in which effective therapy remains elusive," Tse says. "The cure-based approach laboratory will be the world's first and one-of-a-kind facility, assembling research scientists and clinicians whose expertise and focus are principally directed to orbital oncology, traumatic optic nerve injury, and stem cell and biomedical investigations for immediate clinical application."

Tse and his team are working closely with scientists to find molecular clues for cancer therapy. "As a surgeon, I tend to look for surgical remedies to solve perplexing problems, but in reality, the clues often lie in the molecular underpinnings of diseases," he says. "If we are to unlock the mysteries of orbital cancers, the need for basic research cannot be over-emphasized. Medicine is a dynamic field where change is a constant and the future is only an experiment or two away. It is not unusual for us to take a rare cancer and perform a genomic analysis to find the drivers of the tumor's aggressive behavior and devise ways to attack it."

Bascom Palmer's Ocular Pathology Laboratory:

A Unique Resource

With more than 50,000 samples of eye tissue dating back to the 1960s, the Bascom Palmer Florida Lions Ocular Pathology Laboratory provides a unique resource for studying cancers of the eye. Led by medical director Sander R. Dubovy, M.D., professor of ophthalmology and pathology, the Institute's pathology lab analyzes more than 3,000 new biopsy specimens each year.

"We are one of the busiest ocular pathology laboratories in the country," says Dubovy, a retina specialist who is one of the few U.S. physicians board-certified in both ophthalmology and anatomic pathology, having completed residencies in both specialties. "We continue to expand by investing in new equipment, adding additional staff as needed, and most importantly, training young physicians through our pathology fellowship program who will become the next generation of ocular pathologists."

Bascom Palmer's ocular pathology laboratory was founded in 1962 by Victor Curtin, M.D., in a unique association with the Florida Lions Eye Bank. Curtin started the laboratory's collection of specimens and remains a consultant today. That historical perspective is particularly important for oncology patients who return for further treatment, since past and present specimens can be easily compared. Through searches of the laboratory database for rare ophthalmic conditions, Dubovy and colleagues have been able to assemble and publish case studies that have shed new light on the diagnostics, pathophysiology and clinical outcomes of a number of disease entities.

Since the six-person pathology laboratory team processes the specimens within the Institute, Bascom Palmer clinicians can get results very quickly. For instance, the pathology lab's findings can answer vital questions such as:

- Is a tumor malignant or benign?
- Did the cancer originate in the eye or elsewhere in the body?
- How aggressive is the tumor?
- Was the tumor removed completely?

Dr. Sander Dubovy

"Since I'm also a clinician, I understand what our physicians want to know," says Dubovy. "My experience in both ophthalmic and general surgical pathology allows me to diagnose primary lesions of the eye and surrounding tissue as well as metastatic lesions that have traveled to the eye from other primary sites." His dual training is also beneficial when examining patients in the retina clinic. Having studied thousands of eyes under the microscope, he has a unique perspective on the pathophysiology and treatment of patients with retinal disease, including age-related macular degeneration, diabetes and degenerative conditions.

Another important consideration for patient care is that the pathology team knows how to analyze very tiny specimens. Unlike breast or lung tumors, there might only be a small number of cells available. "We know how to handle tiny pieces of the retina that might be smaller than one millimeter."

In fact, Bascom Palmer's pathology lab is so highly regarded that clinicians from around the world regularly send their specimens to Dubovy for analysis. "Many forms of eye cancer are so rare that pathologists not located in an ophthalmic tertiary care center may not be familiar with these disease entities," Dubovy says. "I'm sure the founders of the Florida Lions Eye Bank never suspected that the service they started more than 50 years ago, and still support today, would have such a profound impact on the practice of ophthalmology and patient care both locally and globally."
(See related story on page 18.)

"It is not unusual for us to take a rare cancer and perform a genomic analysis to find the drivers of the tumor's aggressive behavior and devise ways to attack it." —*David T. Tse, M.D.*

Oculoplastic surgeons Drs. Thomas Johnson and Wendy Lee

> "It takes a highly skilled team working together with expertise and an innovative approach to effectively and compassionately treat rare forms of eye cancers."
>
> —*J. William Harbour, M.D.*

LEADERSHIP IN ORBITAL CANCER RESEARCH

The Bascom Palmer team of seven oculoplastic surgeons is committed to become thought leaders in orbital cancer research. As Tse says, "We aim for targeted, individualized therapies that are more effective, less damaging to surrounding tissue and yield quicker positive results in patients suffering from lethal orbital cancers."

An oculoplastic surgeon is an ophthalmologist who has completed additional two-year training in plastic surgery as it relates to the eyes and surrounding structures. These specialists treat many types of orbital and skin adnexal tumors that frequently require coordinated management with other medical disciplines, such as dermatology, otolaryngology, neurosurgery, medical oncology and radiation oncology.

Thomas E. Johnson, M.D., professor of ophthalmology and oculoplastic surgeon, has treated many cases of meningioma, a common brain tumor that extends into the orbit to cause decreased vision, double vision, droopy eyelid, numbness around the eye or bulging of the eye.

"In our imaging studies, we can identify these tumors in the orbit," Johnson says. "Approximately 90 percent are benign and, in many cases, we simply watch them closely over time. However, meningiomas can cause vision problems, even if they are not malignant."

In one recent complex case, Johnson worked closely with Jacques Morcos, M.D., a University of Miami professor of clinical neurosurgery and otolaryngology. "Imaging scans showed that the patient had multiple brain meningiomas," Johnson says. "One involved the orbital roof and extended into the back of the eye causing loss of vision." In a combined procedure, Morcos removed the tumor above the orbital roof, and then Johnson removed the rest of the meningioma from the orbit. "Our patient is now doing fine," he adds. "Her optic nerve had been compressed for many years. Fortunately, her vision was preserved and she is improving slowly."

Like his colleagues in the oculoplastic service, Johnson also sees patients with rhabdomyosarcoma, a malignant tumor whose cancerous cells can wrap around the body's muscle tissues. Rhabdomyosarcomas most often occur in the head and neck of young children who are typically 7 to 10 years old. "Whenever there is a sudden bulging of the child's eye, we do a series of imaging scans, followed by a biopsy if the results are suspicious," Johnson says.

Different types of tumors can develop on the eyelid, including basal cell, squamous cell and sebaceous gland carcinomas, as well as malignant melanomas. If left untreated, these tumors, whether benign or malignant, can grow onto the eye, into the orbit and sinuses, and to the brain by infiltrating into nerves in and around the orbit.

The oculoplastic surgeon's goals in managing malignant eyelid cancers are to first establish an early accurate diagnosis, effect cure by total eradication of the tumor, and preserve or restore eyelid function and appearance.

Eyelid cancers, such as basal call carcinomas, are usually removed surgically in a carefully coordinated process. First, a dermatologist trained in Mohs surgery removes the tumor and carefully examines its margins. Once the tissue margins are pronounced clear of cancer cells, the patient goes into another operating suite where a Bascom Palmer oculoplastic surgeon reconstructs the eyelid.

Tse and John Ragheb, M.D., a pediatric neurosurgeon at Miami Children's Hospital, jointly developed a surgical technique to safely remove a tumor from within the brain and orbit without causing irreversible droopy eyelid—a common problem associated with the conventional method. Bascom Palmer clinicians have also developed an innovative and effective procedure for total reconstruction of the upper eyelid using tissues from the patient's hard palate and borrowing tissues from their "good eye."

Summing up Bascom Palmer's active ocular oncology service, Harbour concludes, "It takes a highly skilled team working together with expertise and an innovative approach to effectively and compassionately treat rare forms of eye cancers. That's exactly what Bascom Palmer's world-class center offers patients not only from Florida, but from around the globe."

To schedule an appointment with a Bascom Palmer specialist, please call 1-888-845-0002 or visit bascompalmer.org.

Mapping the Way

A breakthrough study on mapping the network of small blood vessels in the retina may lead to improved clinical management of central nervous system, systemic and ocular vascular diseases.

The study was led by Hong Jiang, M.D., Ph.D., assistant professor of ophthalmology and neurology at Bascom Palmer.

"The retina provides a window to study ocular, neurological and systemic conditions," says study co-author Jianhua (Jay) Wang, M.D., Ph.D., a Bascom Palmer associate professor of ophthalmology. "Our work on the retina may open up a new era for examining and monitoring microvascular changes associated with diseases, such as stroke, hypertension and diabetes.

Jiang noted that the retinal capillary network is very similar to the network of small blood vessels in the brain and could provide a potential clinical indicator for abnormal neurological conditions. "We would expect to find a denser capillary network in healthy patients than in those with cerebrovascular disease," she says. "Someone with mild symptoms, but a reduced capillary network, might be at higher risk. Once we better understand how the networks relate to diseases, we can start to provide clinical answers to physicians."

The groundbreaking study involved six healthy subjects with no history of cerebral small vessel disease, hypertension, kidney disease or diabetes. The team analyzed the subjects' capillary networks by using the Retinal Function Imager, a non-invasive technology system that does not require an injection of dye to highlight the blood vessels. Bascom Palmer is one of only six institutions in the U.S. with this technology.

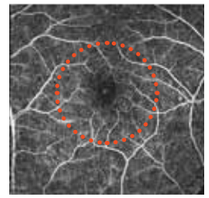
For the fractal analysis of the retinal images, the researchers developed proprietary software to produce high-resolution, capillary perfusion maps. Fractal analysis has been used in various branches of medicine—including the study of large blood vessels—to show differences in the structural patterns of cells, tissues and organs.

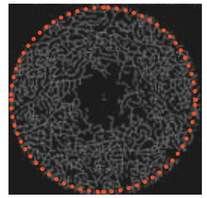
Bascom Palmer's Delia Cabrera DeBuc, Ph.D., a research associate professor of ophthalmology, says, "Fractal analysis may be a more effective way to determine the health of the retina's capillary network than analysis of the retinal vessel caliber in actual images, which is influenced by variations in ocular and camera magnification. These maps reveal more information about small vessels than standard images of the retina."

Pointing to the future, Jiang says, "Our research is still at an early stage. We will continue to study the small blood vessels of the eye, develop additional mapping features, and see how they correlate with the findings for magnetic resonance imaging scans. In that regard, this study may provide an important foundation for advancing our understanding of cerebral small vessel disease, lacunar stroke and other cerebrovascular-related diseases."

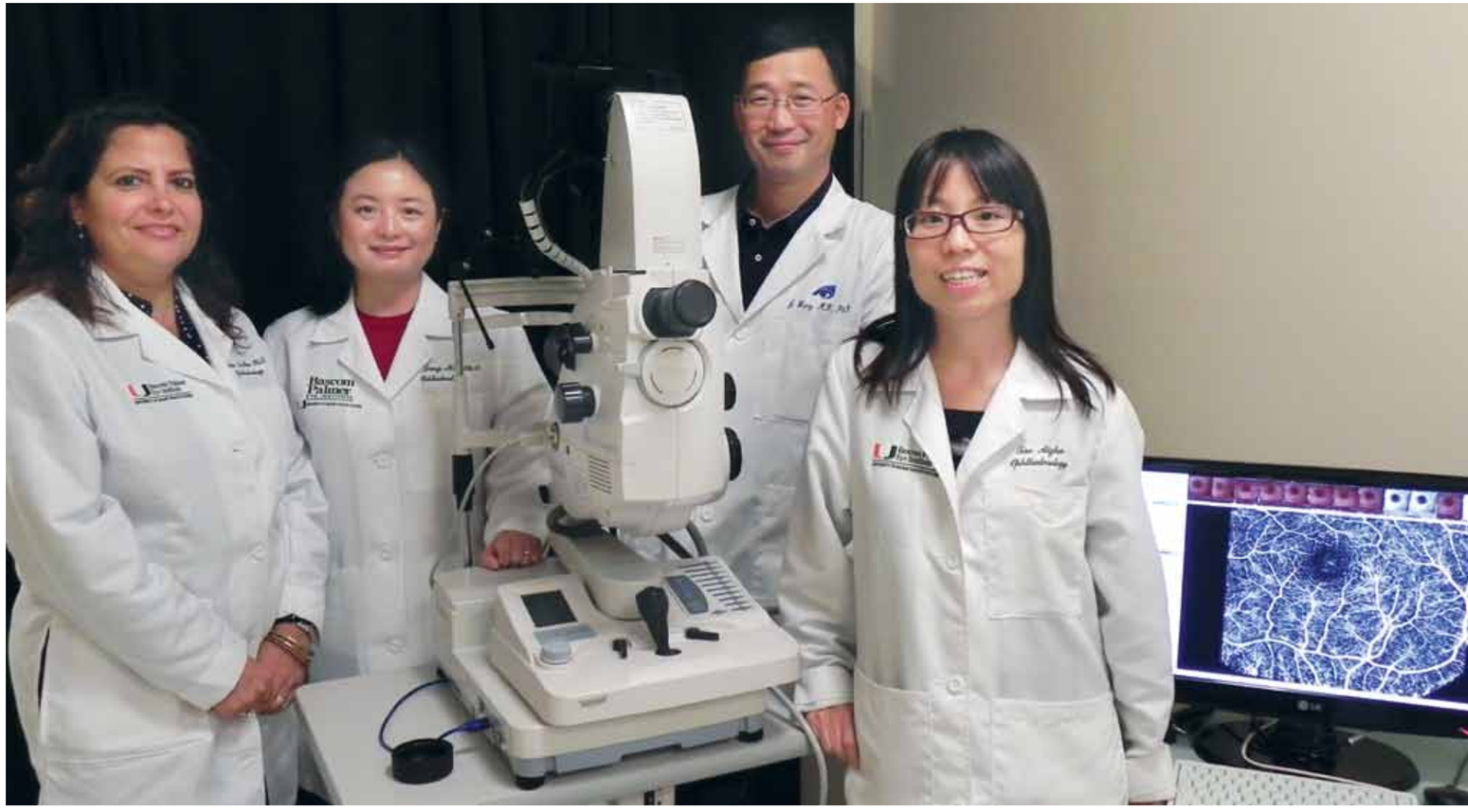
The study, "Automated segmentation and fractal analysis of high-resolution, non-invasive capillary perfusion maps of the human retina," was published in *Microvascular Research*. In addition to Jiang, Wang, and Cabrera DeBuc, other Bascom Palmer co-authors included Byron L. Lam, M.D., professor of ophthalmology; and Aizhu Tao, M.D., M.Sc., research associate. Additional co-authors were University of Miami Miller School of Medicine's Tatjana Rundek, M.D., Ph.D., professor of neurology; and Clinton B. Wright, M.D., associate professor of neurology. Meixiao Shen, Ph.D., M.Sc., of the School of Ophthalmology and Optometry at Wenzhou Medical College in China, also was a co-author. The study was funded by a research supplement to Jiang, part of a NIH R01 grant awarded to Cabrera DeBuc.

FRACTAL ANALYSIS OF RETINAL IMAGES





Bascom Palmer has developed software to automatically segment non-invasive retinal capillary perfusion maps (left) obtained with the Retinal Function Imager. The process yields the skeletonized capillary perfusion image (right) which allows a better analysis of the microvascular network using fractal analysis.



Surrounding the Retinal Function Imager, which produced the human retinal capillary perfusion map displayed on the screen, are Drs. Delia Cabrera DeBuc, Hong Jiang, Jianhua (Jay) Wang and Aizhu Tao.

Simple and Powerful Test

Research led by physician-scientists at Bascom Palmer has produced a breakthrough discovery in diagnosing retinitis pigmentosa, a blinding disease that affects about 1 in 4,000 people in the United States.

Dr. Rong Wen

Dr. Byron Lam

Rong Wen, M.D., Ph.D, and Byron Lam, M.D., professors of ophthalmology, in collaboration with biochemist Ziqiang Guan, Ph.D., a research associate professor at Duke University Medical School, discovered a key marker in blood and urine that can identify people who carry genetic mutations in a gene responsible for retinitis pigmentosa (RP). "A simple urine test can tell who has the RP-causing mutations," says Wen. "Collecting urine is non-invasive and easy, especially from young children."

The first mutation in this gene, named DHDDS, was identified in 2011 by scientists at the University of Miami Miller School of Medicine, including Stephan Zuchner, M.D., Ph.D., Wen, Lam, and Margaret A. Pericak-Vance, Ph.D. on behalf of a South Florida couple who was searching for the reason why three of their children were blinded by RP. Mutations in this gene are more common in persons of Ashkenazi Jewish heritage than in the general population. RP is a group of inherited eye diseases that cause progressive vision loss and blindness due to degeneration of the retina, the layer of light-sensitive tissue at the back of the eye.

"It is our vision that every patient who is affected with an inherited eye disease like RP should have access to a clinician who is knowledgeable about the diseases, as well as to affordable diagnostic testing and counseling," says Lam, director of Bascom Palmer's hereditary eye disease center. "This diagnostic test is a powerful tool that will help in developing treatments for RP caused by DHDDS mutations."

DHDDS, or dehydrodolichol diphosphate synthase, is a key enzyme for producing dolichols, an important type of lipid in cells in the body. The DHDDS mutation has special meaning to the Lidsky family of South Florida. Three of the four Lidsky children, who are now in their 30s, began to lose their sight in their teens. "The fact that a simple blood or urine test can identify the genetic defect that causes this form of RP is very important," says Betti Lidsky, mother of the children, and a founder of Hope for Vision, a non-profit organization dedicated to promoting retinal research. "I have tremendous hope in the doctors and scientists doing this life-changing work and am confident that RP is one step closer to being treated."

Results of this research are published in a paper titled "Aberrant dolichol chain lengths as biomarkers for retinitis pigmentosa caused by impaired dolichol metabolism" in the *Journal of Lipid Research*.

Lam and Wen also serve as directors of the Adrienne Arsht Hope for Vision Center of Retinal Degeneration Research at Bascom Palmer. Their work has been supported by Adrienne Arsht Hope for Vision funds and by the National Eye Institute/ National Institutes of Health.

"We are hopeful that the Bascom Palmer research that identified the genetic cause of retinitis pigmentosa will one day lead to a cure for our family and generations of others." *—Betti and Carlos Lidsky*

Betti and Carlos Lidsky (center) pictured with their children and grandchildren.

Betti Lidsky and Adrienne Arsht at the research laboratory dedication.

New Center to Open in 2015

To schedule an appointment with one of our physicians, please call 1-888-845-0002, or visit us online at www.bascompalmer.org.

Rendering of the new Bascom Palmer Eye Institute at Naples courtesy of Gresham, Smith and Partners

February 8, 2013 was a defining moment for Bascom Palmer's future in Naples, Florida.

A groundbreaking ceremony was held to celebrate the purchase of a 1.5-acre site located on the northeast corner of U.S. 41 and Cypress Woods Drive, across the street from Park Shore Drive. Construction of a new $15 million, 20,000-square-foot, state-of-the-art eye center is scheduled for completion in 2015. In 2004, Bascom Palmer opened the only university-based eye care center in southwest Florida—a leased, 3,000-square-foot office located in Naples Community Hospital's NCH Medical Plaza. The practice was established primarily to diagnose and treat retinal and macular diseases. Over the past nine years, the practice has grown considerably in size and scope. Bascom Palmer's dramatic expansion in Naples will double the number of ophthalmologists on permanent staff, house a custom-designed ambulatory surgical center, and provide more than six times the current amount of clinical space for the treatment of virtually all eye diseases and disorders. The additional space will allow Bascom Palmer to expand the number of clinical research trials offered to patients. The center will include full-time specialists for all ocular diseases, including macular and corneal diseases, cataracts and glaucoma.

"This new facility will be a model for 21st century ophthalmic centers," says Stephen G. Schwartz, M.D., M.B.A., medical director of Bascom Palmer Eye Institute at Naples. "It has been specifically designed to provide a better patient experience, including bigger and brighter waiting areas and advanced patient-centered technology. It will allow us to accommodate our patients in a friendlier environment, and give us the opportunity to perform surgery in our own custom-designed surgical center."

One of these patients is Hilda Saade who has relied on Schwartz for her eye care for close to a decade. "Dr. Schwartz is a wonderful doctor who really cares about his patients," says Saade, an 85-year-old mother, grandmother and great-grandmother. "He's almost like a member of our family."

When the Naples facility originally opened, Saade began seeing Schwartz for treatment of age-related macular degeneration. Through the years, he's been able to preserve as much of her vision as possible with medication injections and other treatments. "Most of the time the shots have worked very well," says Saade. "I can still read and watch TV."

Saade's daughter, Christiane Semaan, drives her mother to Bascom Palmer at Naples several times a year. Semaan says, "We've received excellent care and understand why Bascom Palmer has such a great reputation." Semaan adds that Dr. Schwartz always takes the time to ask Saade about her family, which includes two University of Miami graduates. As she prepares for her regular checkup with Schwartz, Saade concludes, "I look forward to seeing Dr. Schwartz every time. He's a great physician and a beautiful person."

"Mrs. Saade, like millions of patients around the world, has benefited from medical advances pioneered at Bascom Palmer," says Schwartz. "This is just one example of the type of medical eye care that Bascom Palmer brings to the Naples community."

Bascom Palmer has developed deep and sustained relationships with the medical, business and philanthropic communities in southwest Florida. The new facility is also expected to draw more visitors to the region, contributing to Collier County's growth as a medical destination.

A Mother's Last Wish Comes True

IN 1979, 5-year-old Juan "Gio" Aguirre was pulling a toy car in Holguin de Oriente, Cuba, with his mother, Miriam, and younger sister, Janette. As they were walking along the road, a drunken motorcyclist swerved and hit Juan directly in the head. Following 14 stitches in his left eye and a serious eye infection, Juan's injury resulted in scarring on his cornea and left him with little central vision.

The following year, the Aguirre family came to the United States. They first settled in Miami and then moved to St. Paul, Minnesota, where Juan and Janette grew up. As a child, Juan had an exceptional talent for music. He and his father played the guitar, piano, banjo, ukulele and accordion. Juan played by ear. He eventually became a successful musician and recording artist under the name Diablo Dimes, and now lives in the Shenandoah Valley with his wife and two children. His mother eventually moved back to Miami.

"As long as I remember, my mother spoke to my brother about getting a corneal transplant," says Janette. "But, we never thought it was a possibility. We thought it was something that happened only in the movies. We thought the cost would be too high or a cornea would never be available because donor lists are so long."

Miriam, however, was a strong believer in organ donation. She became an organ donor in 1995 and dreamed of giving her corneas to her son. She even wrote in her diaries of donating all of her organs. Janette recalls, "Mom wrote 'take any part you can use except my corneas—they are for my son.'"

When Miriam died suddenly of a heart attack last fall on Miami Beach, a whirlwind group of events unfolded that involved the dedicated teams of professionals from the Florida Lions Eye Bank and Bascom Palmer.

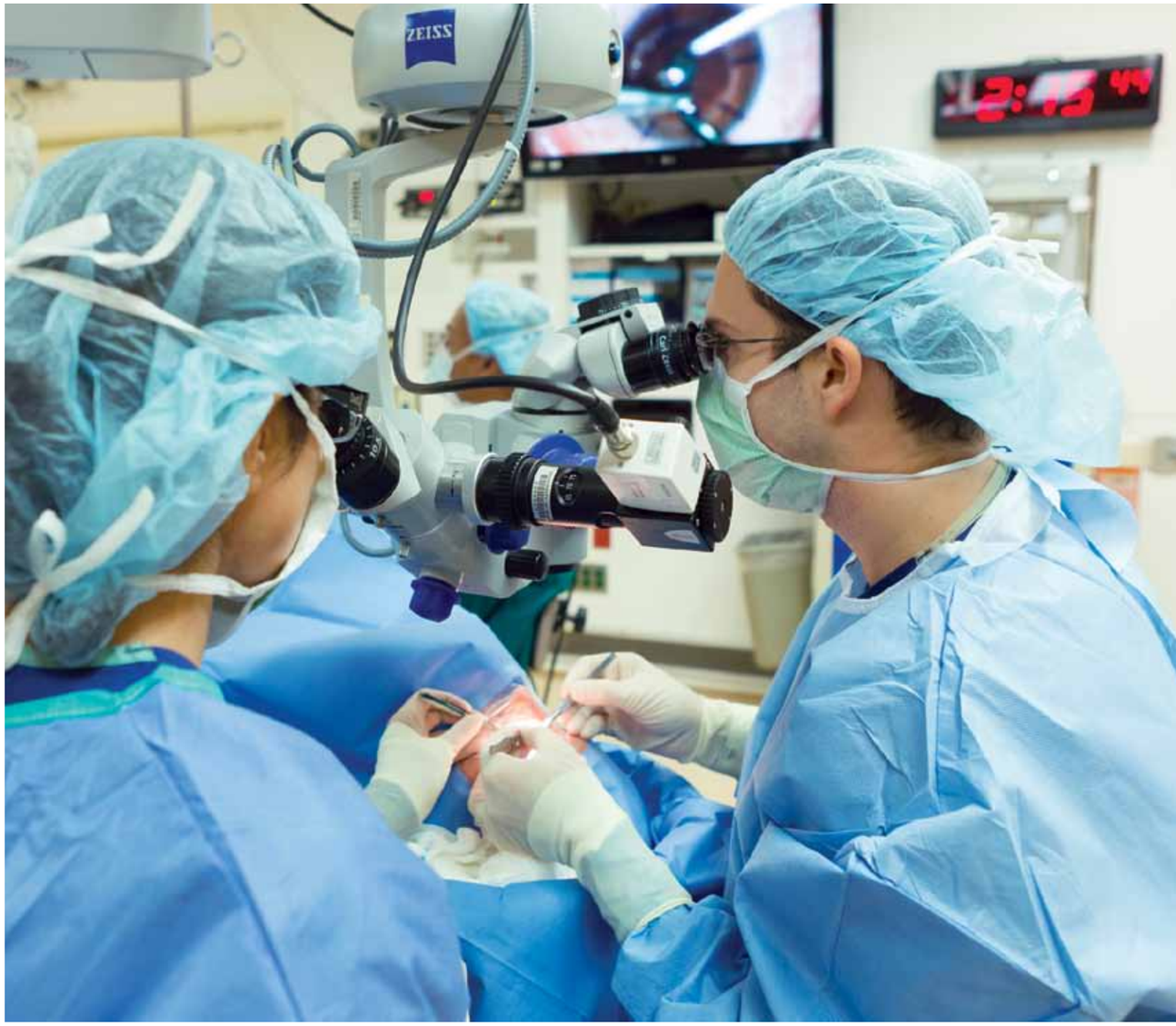
Within 24 hours of her death, the Dade County Medical Examiners Office notified the Florida Lions Eye Bank that Miriam Aguirre Santos had passed away. Almost immediately, the Eye Bank contacted her children to inform them of their mother's wish to donate her cornea. Since corneas must be transplanted within a few days of the donor's death, it takes a rare combination of circumstances for a family transplant to take place, according to Elizabeth Fout-Caraza, executive director of the Florida Lions Eye Bank.

"Because corneal tissues cannot be frozen, a transplant must be done within seven days," says Fout-Caraza. "We had to find out if the son wanted the transplant, if he was a viable candidate, and if he wanted the cornea to be sent to an ophthalmologist in Virginia for the surgery. You cannot believe how elated we were when he told us that not only did he want the cornea, but he knew he was a good candidate for a transplant, and that he would fly to Bascom Palmer for the procedure."

While Fout-Caraza was making arrangements for the Eye Bank, Aida Grana, director of Bascom Palmer's corneal service, reached corneal transplant specialist Guillermo Amescua, M.D., who was in Honduras on a medical mission performing cataract surgeries for the poor.

Fortunately, within 48 hours, Amescua and Aguirre met in Miami. "While corneal transplant surgery has been done successfully for decades, not every patient is a candidate," says Amescua, assistant professor of ophthalmology at Bascom Palmer. "Fortunately, Juan turned out to be a suitable recipient and his mother's cornea was in excellent condition, so we went ahead with the surgery."

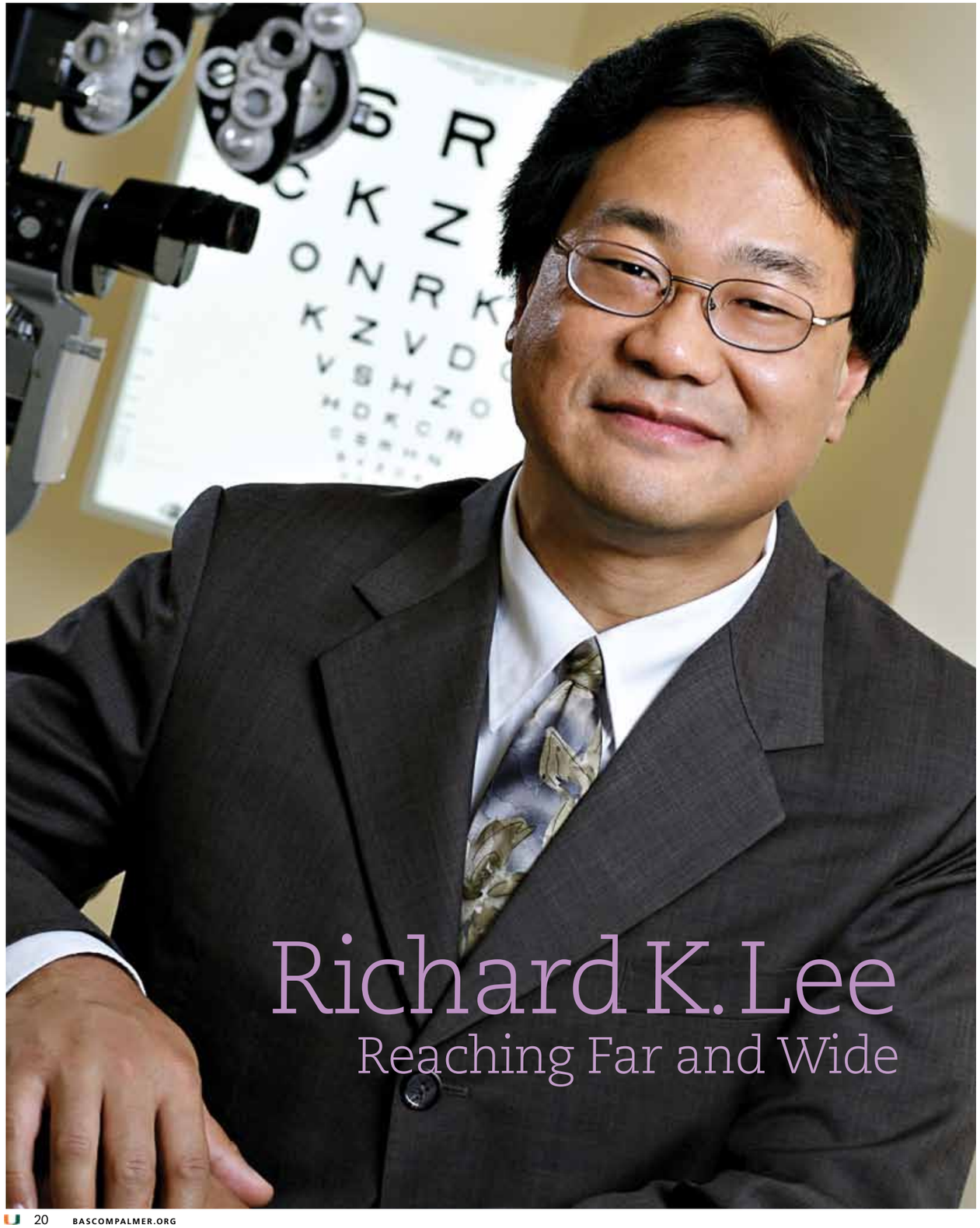
Within a week following the surgery, Juan's vision was improving. "I can see much more clearly without the constant gloomy haze," he says. "Now, when I pick up my guitar or the piano I can finally see what my left hand is doing without turning my head. It's just a wonderful experience."



Dr. Guillermo Amescua performing the first mother-to-son corneal transplant at Bascom Palmer.

Each year, the Florida Lions Eye Bank, which has been located at Bascom Palmer since both institutions were founded in the early 1960s, facilitates approximately 700 corneal transplants from organ donors. In fact, Miriam's second cornea was transplanted in a Miami woman, while her donated liver was transplanted in a woman in Boca Raton. "Organ donors save lives," Fout-Caraza says. "I encourage everyone to enroll in the Florida Donor Registry by going online to www.donatelife-florida.org." She concludes, "While every corneal transplant is extremely rewarding, this first mother-son corneal transplant in South Florida history was extraordinary!"

Juan Aguirre and Dr. Amescua before surgery.



Richard K. Lee
Reaching Far and Wide

"As ophthalmologists, we are in a position of privilege.
We have a unique ability to make a difference.
We have an obligation to improve vision and improve life."

— Richard K. Lee, M.D., Ph.D.

In October, Richard K. Lee, M.D., Ph.D., traveled to Central America as part of an international group of healthcare providers delivering much-needed eye care to patients in Panama aboard the ORBIS Flying Eye Hospital, the world's only airborne ophthalmic training and treatment hospital. For Lee, associate professor of ophthalmology, taking part in the weeklong mission, that included performing surgeries and training physicians and ophthalmic staff at local government hospitals, was an easy decision.

"As ophthalmologists, we are in a position of privilege," he says. "We have a unique ability to make a difference. We have an obligation to improve vision and improve life."

It's a message he tries to instill in his students.

Since 2009, Lee, a glaucoma and cataract specialist, has been director of community outreach for Bascom Palmer. But his dedication to humanitarian service dates back to his youth. "It's an extension of who I am," he says. "It's who my parents brought me up to be."

Lee's commitment to furthering Bascom Palmer's rich history of reaching out to communities in need has taken him around the world and to some of the poorest neighborhoods in Florida.

REACHING OUT

Aboard the ORBIS Flying Eye Hospital, a converted DC-10 aircraft with operating and laser treatment rooms, as well as a 48-seat classroom for healthcare professionals, Lee performed sight-saving glaucoma and cataract surgeries. The goal was two-fold: to perform much-needed service and to train local eye professionals, leaving a lasting impact on the region.

Closer to home, Lee coordinates the activities of Bascom Palmer's Vision Van. Donated to the Institute in 2004 by the Josephine Leiser Foundation, the 40-foot, self-contained mobile eye clinic provides invaluable eye screenings to underserved populations throughout South Florida. The custom-built van features a comprehensive examination room, three screening stations, waiting area and state-of-the-art ophthalmic equipment. Lee estimates the Institute's faculty, residents, fellows and staff, who volunteer on weekends, provide more than 2,000 free vision screenings during the year at 12 to 15 sites throughout South Florida and the Florida Keys.

Dr. Richard Lee aboard the ORBIS Flying Eye Hospital.

"The patients are thrilled; some of them have been coming to us for years," Lee says. "They are getting a quality eye exam or recheck. For some, they wouldn't receive their eye care otherwise."

Among the Vision Van's volunteer corps are members of the University of Miami's medical student ophthalmology interest club. For more than a decade, Lee has been the club's faculty advisor. In addition to their work aboard the Vision Van, the students have helped collect, screen and sort thousands of eyeglasses, stocking the Institute's eyeglass library with free glasses for people in need. The glasses are distributed to in-state patients who cannot afford their own eyeglasses.

Emmanuel Paz, CRNA, (left) and Dr. Thomas Johnson (center) were part of the Bascom Palmer team that traveled to Haiti following the January 12, 2010 earthquake. They are shown here assisting a patient arriving at the field hospital in Port-au-Prince.

Standing in front of the Bascom Palmer Vision Van as it was loaded into a Volga-Dnepr Anatov 124 at Miami International Airport are (from left) Dr. Richard Lee, Dr. Eduardo Alfonso, and Kazushi Miyatake, M.D., medical attaché with the Consulate-General of Japan in Miami.

University of Miami Miller School of Medicine students and Bascom Palmer residents volunteer at the 2013 Florida Keys Health Fair at Key West High School.

Ophthalmic technician Ramon Diaz provides patient care aboard Bascom Palmer's Vision Van in New Orleans following Hurricane Katrina.

INTERNATIONAL RESPONSE

When the Tohoku-Pacific Ocean Earthquake devastated northern Japan in March 2011, Lee traveled aboard the world's largest commercial cargo jet—carrying the Vision Van in its belly—to the country's Sendai region. "It was fascinating," he says, of the two-day journey aboard the aging Russian airliner. "We were the first commercial airplane to land at Sendai airport after the tsunami.

In Sendai, Lee teamed up with Japanese ophthalmologists and healthcare workers to offer emergency screenings and treatments in areas where ophthalmic care was unavailable. While Lee returned to Miami after one week, the Vision Van remained in Japan for three months for use by the Japanese team.

HAITI PRESENCE

Global service has taken Bascom Palmer physicians on medical missions in Asia, Africa, Europe and Latin America. Perhaps nowhere has Bascom Palmer's humanitarian presence been more strongly felt than in Haiti, where for more than four years, the Institute's faculty and staff have been providing care and restoring ophthalmic services to the tiny Caribbean nation devastated by an earthquake in January 2010.

Arriving with equipment, instruments, eyeglasses and medical supplies, Bascom Palmer volunteers began providing ophthalmic and trauma care to victims and first responders beginning the first day after the disaster. The Institute's presence in Haiti continues today—its makeshift eye clinic relocated to the Hospital Bernard Mevs in Port-au-Prince through collaboration with Project Medishare. Two University of Miami faculty members, Barth Green, M.D., and Arthur Fournier, M.D., founded the nongovernmental organization in 1994 to provide care in Haiti. Along with coordinating the Institute's relief efforts in the aftermath of the disaster, Lee, as volunteer medical director for eye services, is spearheading the effort to establish a state-of-the-art ophthalmology clinic at the Hospital.

"Our goal is to enable and empower local doctors to take care of others. If we succeed, they will hopefully not need us to be there. We would have played an important role in the eye care delivery system throughout the country."

Since the earthquake, Bascom Palmer has donated or secured donations of hundreds of thousands of dollars of medical equipment and supplies for the new facility and established a fully equipped clinic with functional operating rooms.

At the clinic, Lee is working to initiate a Bascom Palmer-sponsored clinical trial testing the use of lasers as a primary treatment for glaucoma. He is interested in creating innovative treatment models for developing countries since access to care is very different in these environments.

UNDERSTANDING GLAUCOMA

For years, Lee's research has focused on the molecular, cellular, proteomic and neurophysiologic basis of glaucoma. Understanding the cellular and molecular pathways involved in the development of the sight-robbing disease, he says, is critical "so we can intervene and prevent glaucoma from occurring." Characterized by progressive damage to the optic nerve and loss of vision, the disease is one of the leading causes of preventable, irreversible blindness worldwide. Lee is currently involved in a number of studies and clinical trials aimed at discovering new treatments for glaucoma that could one day prevent the disease or stop it in its tracks.

ACADEMIC FOCUS

Growing up in Los Angeles and earning undergraduate degrees in chemistry and biology at Pomona College in Claremont, California, Lee never envisioned a future as an ophthalmologist. But when he attended a translational research course in glaucoma taught by Bascom Palmer professor Douglas R. Anderson, M.D., during his training at the University of Miami Miller School of Medicine, and later observed in the Institute's clinics and operating rooms at Anderson's invitation, he saw an opportunity to work with his hands as a micro-surgeon and to continue to study the role of apoptosis (programmed cell death) in human disease.

Lee completed a viral oncology research fellowship at Sylvester Comprehensive Cancer Center, and an ophthalmology residency and research and clinical glaucoma fellowships at Bascom Palmer. He holds secondary appointments in the department of cell biology and anatomy and the neuroscience graduate program. He is widely published and has presented at conferences around the world, most recently in Uruguay, China, Chile, Panama, Spain and Ecuador.

"It is a privilege to be at Bascom Palmer," he says. "This is a great place. Bascom Palmer has afforded me great opportunities to provide the best clinical care possible and do research that will hopefully change the way we understand and treat eye disease. I plan to continue what I am doing and to continue to be responsive to ophthalmic needs around the world."

Awards and Honors

The American Academy of Ophthalmology's Achievement Award program recognizes individuals for their contributions to the Academy, its scientific and education programs, and to the field of ophthalmology. This year, at their annual meeting in New Orleans, the Academy honored professor and neuro-ophthalmologist BYRON L. LAM, M.D., with a Senior Achievement Award, and associate professor and glaucoma specialist RICHARD K. LEE, M.D., PH.D., with an Achievement Award. STEPHEN G. SCHWARTZ, M.D., M.B.A., retinal specialist and medical director of Bascom Palmer Eye Institute at Naples, received a Special Recognition Award for his leadership as president of the 500-member Florida Society of Ophthalmology. KRISHNA S. KISHOR, M.D., assistant professor and glaucoma specialist, has been chosen to participate in the Academy's leadership development program, Class of 2014. Immediately prior to the Academy's meeting, the Cornea Society presented the prestigious Claes H. Dohlman, M.D. Award to RICHARD K. FORSTER, M.D., professor and holder of the Richard K. Forster Distinguished Chair in Corneal and External Diseases. The Award was given to recognize Forster's lifetime of teaching excellence and for contributions to the profession.

Dr. Stephen Schwartz

CAROL L. KARP, M.D., has been recognized by the Women in Ophthalmology and the American Medical Association Women Physicians Sector with a 2013 Mentorship Award. Karp, professor and corneal and external diseases specialist, is recognized as a physician mentor who has made a difference in the professional lives of women in the medical profession.

JANET L. DAVIS, M.D., M.A., professor and vitreoretinal specialist, was elected president of the International Uveitis Study Group, an international society of more than 100 uveitis specialists from around the world. The society comprises researchers and clinicians who are committed to stimulate, encourage and intensify a concerted effort in research and clinical management of uveitis, a group of diseases characterized by intraocular inflammatory and infectious diseases and inflammation of adjacent tissues such as the retina or optic nerve.

Dr. Eduardo Alfonso and Dean Eduardo Garcia Luna

EDUARDO C. ALFONSO, M.D., professor and chair of Bascom Palmer, received the prestigious *Catedra Laboris Award* from the University of Monterrey. After signing a cooperation agreement between the University of Miami and the University of Monterrey, Alfonso presented an overview of Bascom Palmer. In his presentation, *Bascom Palmer Eye Institute: The Road to Excellence*, Alfonso stressed the importance of education and research to Bascom Palmer's mission. "Without research, we are unable to improve the human condition."

Signed by Alfonso and Eduardo Garcia Luna, M.D., dean of the University of Monterrey's College of Health Sciences, the cooperation agreement is designed to promote Mexico's ophthalmic research, knowledge-sharing and student outreach, in conjunction with the Fundación Ojos para México, the Eye Foundation for Mexico. Also attending the ceremony were Rogelio Villarreal, M.D., president of the Eye Foundation; Eliseo Vela Madrigal, representing the president of the College of Ophthalmology of Nuevo Leon; Luis Gomez Guzman, M.D., director of clinical sciences; and Jacobo Wapinski Kleiman, president of the Jewish Community of Monterrey.

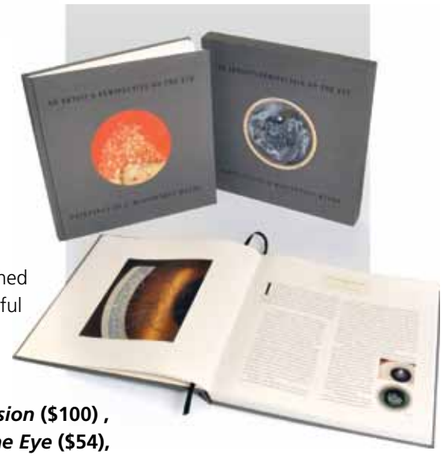
Bookmark This

Bascom Palmer's marketing and communications program, under the leadership of MARLA BERCUSON, director of business operations, received two prestigious national awards for *Bascom Palmer Eye Institute: 50 Years of Vision*—a 186-page commemorative book written and produced for Bascom Palmer's golden anniversary. The awards, recognizing excellence in healthcare marketing, were received from *Healthcare Marketing Report* and *Aster Awards*.

The Florida Society of Ophthalmology (FSO) honored two Bascom Palmer physicians at its 2013 annual meeting. J. WILLIAM HARBOUR, M.D., received the Shaler Richardson, M.D. Service to Medicine Award, which recognizes the greatest personal contribution to quality ophthalmic patient care. Harbour is a professor of ophthalmology and ocular oncologist.

NINEL Z. GREGORI, M.D., received the Michael R. Redmond, M.D. Ophthalmologist Young Leadership Award, which recognizes an ophthalmologist younger than 40 who has demonstrated organizational leadership, service, competence and devotion to the high ethical and professional standards of the FSO. Gregori, an associate professor and vitreoretinal specialist, serves as medical director of VA Ophthalmology and chief of the eye care section at the Miami Veterans Affairs Hospital. BASIL K. WILLIAMS, M.D., second-year resident, was recognized for his study on corneal ulcers, taking the top prize at the resident research symposium.

Dr. Ninel Gregori receiving the Young Leadership Award from Dr. Charles Slonim, president of the Florida Society of Ophthalmology.



J. MCGUINNESS MYERS was a medical illustrator at Bascom Palmer from 1966-1968. During his brief career at the Institute, Myers completed more than 100 stunning paintings of ocular conditions. *An Artist's Perspective of the Eye* was published by Bascom Palmer and is a beautiful addition to any library.

To purchase a copy of *Bascom Palmer: 50 Years of Vision* ($100) , or *An Artist's Perspective of the Eye* ($54), please call (305) 326-6190 or email bpeicommunications@med.miami.edu.

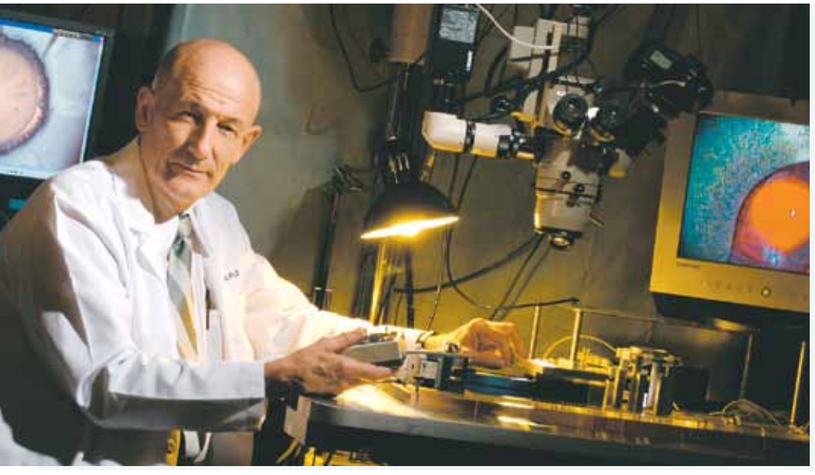
EDUARDO C. ALFONSO, M.D., was recently named president-elect of the Pan American Association of Ophthalmology (PAAO), an organization founded in 1939 to promote scientific and cultural exchange among ophthalmologists of the Western Hemisphere. With members in more than 35 countries, Alfonso will be installed as president in 2015 at the PAAO Congress in Bogotá, Colombia.

Alfonso's dedication to the field of ophthalmology and his superb leadership have also been recognized by the Association of University Professors of Ophthalmology (AUPO) where he has been elected as president. When his term begins next year, he will represent the organization composed of more than 300 ophthalmology departmental chairs, medical education program directors, and scientific research directors from academic medical centers around the United States.

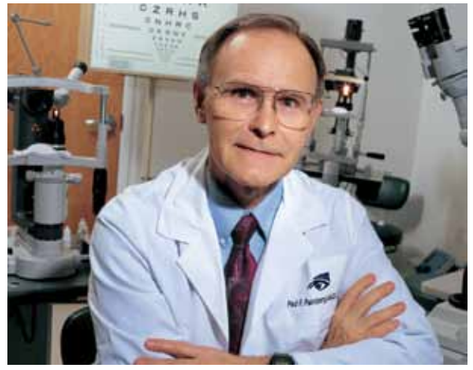
Drs. Wen-Hsiang Lee, Eduardo Alfonso, Chi-Chao Chan and Janet Davis

The Bascom Palmer Eye Institute was awarded the Streilein Foundation for Ocular Immunology Visiting Professorship to sponsor a visit and seminar by Chi-Chao Chan, M.D., senior scientist and chief of the immunopathology section at the National Eye Institute. Chan, a world expert in intraocular lymphoma, immunopathology of uveitis and molecular pathology of age-related macular degeneration, has made seminal contributions to the fields of immunology and ophthalmology.

The Streilein visiting professorship supported Chan's visit as speaker for Bascom Palmer's annual Frontiers in Vision Research seminar series. The visiting professorship is named in honor of J. Wayne Streilein, M.D., often referred to as the father of modern ocular immunology. Streilein was the president and director of research at Schepens Eye Research Institute at Harvard Medical School and former chairman of the University of Miami Miller School of Medicine's department of microbiology and immunology.



JEAN-MARIE PAREL, PH.D., ING, ETS-G, research associate professor of ophthalmology and director of Bascom Palmer's ophthalmic biophysics center, was honored by the University of Miami's biomedical engineering department for his many years of service to the department. Ozcan Ozdamar, Ph.D., chair of the biomedical engineering department, credits Parel for being the driving force behind the creation of the department's biomedical optics program, as well as being a tireless and extraordinarily successful mentor to the students and faculty of the biomedical engineering department.



Dr. Paul Palmberg

At the annual meeting of the American Glaucoma Society, PAUL S. PALMBERG, M.D., PH.D., professor of ophthalmology, presented the Glaucoma Surgery Day keynote lecture. Palmberg is world renown for his pivotal research in the treatment of glaucoma, having coined the term "target pressure" to represent the goal in halting or slowing glaucoma damage. Also at the meeting, TA CHEN PETER CHANG, M.D., assistant clinical professor, received the society's prestigious Mentoring Award for Advancement of Physician-Scientists.

Congratulations to J. WILLIAM HARBOUR, M.D., on receiving the Macula Society 2014 Paul Henkind Memorial Lecture and Award presented for outstanding retinal research. Harbour is also a recipient of a $150,000 Senior Scientific Investigator Award by Research to Prevent Blindness (RPB). RPB's Senior Scientific Investigator Awards support nationally recognized senior scientists conducting eye research at medical institutions in the United States. Since the award was established in 1987, Harbour is one of 188 scientists at 59 institutions to receive this highly sought-after, flexible research grant.

Now in his second year as vice president of the American Glaucoma Society, DAVID S. GREENFIELD, M.D., professor of ophthalmology, represents its 1,000 clinician and scientist members who work to further enhance the society's heritage as the leading glaucoma subspecialty organization in the country. He will assume the role of president next year. Greenfield oversees all clinical, educational and scientific aspects of glaucoma diagnosis, monitoring and treatment at Bascom Palmer at Palm Beach Gardens.

Dean Pascal Goldschmidt, Dr. David Tse and President Donna Shalala

It's Never Too Late

In the rarest of events, David T. Tse, M.D., professor of ophthalmology, was awarded a bachelor of science degree from the University of Miami nearly 40 years after launching his medical career.

Tse enrolled at the University of Miami as an undergraduate in 1969, but after only two years, was accepted to the University of Miami School of Medicine. While Tse received his medical degree in 1976, he never received his undergraduate degree, a detail he casually mentioned to UM President Donna E. Shalala.

"President Shalala asked me where I went to school, and I told her UM, but I didn't get the undergraduate degree because I got accepted to medical school after two years," Tse explained.

That was the extent of it, Tse thought, but not for Shalala. When she discovered Tse was just 12 credits short of earning the degree, a deficit easily fulfilled by credits from his first year of medical school, Shalala enlisted the help of Pascal J. Goldschmidt, M.D., senior vice president for medical affairs and dean of the Miller School of Medicine and CEO of UHealth, as well as Eduardo C. Alfonso, M.D., to orchestrate a memorable moment for Tse.

With the diploma in hand, Shalala and Goldschmidt made a surprise visit to Bascom Palmer's regularly scheduled Grand Rounds. Standing among more than 120 colleagues and friends, Tse finally received the degree he earned four decades earlier. Following the ceremony, Tse exclaimed, "I was thunderstruck and totally surprised to receive this incredible honor. What an unforgettable moment for me and my family."

Nationally Recognized Glaucoma Specialists Return to Bascom Palmer

Dr. Alana Grajewski

Dr. Elizabeth Hodapp

Alana Grajewski, M.D., and Elizabeth Hodapp, M.D., both nationally recognized experts in the field of adult glaucoma and internationally recognized experts in pediatric glaucoma, have returned full-time to the faculty of Bascom Palmer. Ten years ago, they established the pediatric glaucoma service at Bascom Palmer, caring for children with glaucoma and teaching glaucoma fellows in the unique subspecialty of childhood glaucoma. Now as they join the full-time faculty, they will care for both adult and pediatric patients.

Grajewski graduated from Stanford University and received her degree in medicine from the Chicago Medical School. She completed her residency in ophthalmology at Wills Eye Hospital and two fellowships at Bascom Palmer in glaucoma and glaucoma research. Following her fellowships she joined the full-time faculty at Bascom Palmer until 1994, when she and Hodapp created a private referral glaucoma practice and remained on the voluntary faculty. In 2007, she accepted a position as professor of ophthalmology and director of pediatric glaucoma at the University of Minnesota. She created the Childhood Glaucoma Research Network at that time and continued to work as co-director of the pediatric glaucoma service at Bascom Palmer, returning once a month to the Institute. Grajewski now returns as professor and director of a newly established international pediatric glaucoma service.

Following 20 years in private practice, Hodapp returns to Bascom Palmer where she worked from 1981 to 1994. Similar to Grajewski, Hodapp continued as a voluntary faculty member and co-director of the pediatric glaucoma service at the Institute. Hodapp received a bachelor of arts degree from Yale College and a doctor of medicine degree from Harvard Medical School. She completed a residency in ophthalmology and a fellowship in glaucoma at Washington University. While Hodapp will see adult glaucoma patients, she will continue to focus her efforts in pediatric glaucoma.

In response to increased demand, the glaucoma service is growing substantially. Bascom Palmer now offers 11 full-time glaucoma specialists. As an international referral resource for complicated eye conditions, Bascom Palmer will be the center for international care and research in the area of childhood glaucoma. Although glaucoma most commonly affects the elderly, primary congenital glaucoma occurs in about 1 in 25,000 babies born in the United States. Glaucoma may also develop in infants and children who have other types of systemic and eye disease increasing the incidence to about 1 in 5,000. For both adults and children with glaucoma, the prevention of permanent blindness requires detection and proper treatment. Pediatric glaucoma is treated differently than adult glaucoma as the treatment is urgent surgery. Early detection and treatment can mean the difference between a life with sight or blindness.

Hodapp is available for consultation in Miami, and Grajewski in Miami and Palm Beach Gardens.

To schedule an appointment with one of our physicians, please call 1-888-845-0002, or visit us online at www.bascompalmer.org.

Congratulations Professor Dubovy

Bascom Palmer is pleased to announce that vitreoretinal specialist Sander R. Dubovy, M.D., has been promoted to professor of ophthalmology and pathology. Dubovy is the medical director of the Florida Lions Eye Bank and Ocular Pathology Laboratory at Bascom Palmer. He earned a bachelor of arts degree from the University of Virginia and a medical degree from New York University School of Medicine. He completed an ophthalmology residency at the University of Chicago and a pathology residency at Columbia University. Dubovy then completed three fellowships: ophthalmic pathology at the Wilmer Eye Institute at Johns Hopkins University; served as a special fellow in ophthalmic pathology at the Armed Forces Institute of Pathology; and medical retina at the Moorfields Eye Hospital at University College London. Dubovy's research concentrates on macular diseases, including age-related macular degeneration and retinal occlusive disease, and clinicipathologic correlation of ocular disease.

NEW & NOTABLE

Justin H. Townsend, M.D., has joined Bascom Palmer as an assistant professor of clinical ophthalmology. A vitreoretinal specialist, Townsend received a bachelor of science degree and a doctor of medicine degree from the University of Florida. He then completed an ophthalmology residency at Bascom Palmer followed by a fellowship in vitreoretinal disease and surgery at the Emory Eye Center, Emory University. Married to Natalie A. Townsend, OD, FAAO, an optometrist and optometric externship director at Bascom Palmer, he is available for consultation at Bascom Palmer's Miami, Plantation and Palm Beach Gardens locations.

Townsend's specialties include retinal detachment, diabetic retinopathy, macular diseases, age-related macular degeneration and endophthalmitis. His research interests include diabetic retinopathy and innovative surgical devices and techniques.

Bascom Palmer recently celebrated its XXXV Annual Inter-American Course in Clinical Ophthalmology (CURSO) in Miami. The 4-day course was a tremendous success, with 720 ophthalmologists from more than 30 different countries in Latin America and the Caribbean in attendance. CURSO is the largest meeting in the United States held for Spanish-speaking ophthalmologists and is presented with simultaneous English-Spanish translation. Topics chosen for CURSO span the entire specialty of ophthalmology with particular attention given to the latest developments in cataracts, LASIK, glaucoma, macular degeneration, eye cancers and oculoplastics. The XXXVI CURSO will be held at the Trump National Doral Resort on October 26-29, 2014. For more information, please contact our continuing medical education department at bpeicme@med.miami.edu.

Donors focus on lasers

Dr. Eduardo Alfonso, Dr. William Culbertson and Michael Gittelman in the new Arkin Laser Vision Center.

Palm Beach Gardens residents Jules and Shirley Arkin feel a strong sense of connection with Bascom Palmer Eye Institute. More than 30 years ago, Jules was seen by retinal specialist Donald Gass, M.D, one of the Institute's first five faculty members, and more recently by Philip J. Rosenfeld, M.D., Ph.D., professor and international leader in the fight against age-related macular degeneration. "I took part in Dr. Rosenfeld's studies a decade ago," says Jules, whose brother, Stanley Arkin, is chair of Bascom Palmer's Anne Bates Leach Eye Hospital's Board of Governors. "While I don't have much vision left, Dr. Rosenfeld has been able to stabilize my condition."

Shirley Arkin was preparing to judge a Miss USA pageant in 2000 when her vision began to blur and she had sudden pain in her eyes. "I first went to a local doctor who told me I would go blind and there was nothing they could do," she says. "I then went to Bascom Palmer where I knew they would know how to treat my condition."

At Bascom Palmer's Palm Beach Gardens campus, Terrence P. O'Brien, M.D., professor and holder of the Charlotte Breyer Rodgers Distinguished Chair in Ophthalmology, performed multiple cornea transplants on Shirley, using tissue provided by the Florida Lions Eye Bank. "I've gone from being nearly blind to having 20/20 vision again," says Shirley. "Bascom Palmer has given me back my life."

A former "Miss Philadelphia," Shirley was an opera singer and lead showgirl at the Latin Quarter in the late 1950s, where she performed with comedian Milton Berle and singers Frank Sinatra and Sophie Tucker. Now, the 82-year-old is still performing on the senior circuit and organizing shows to benefit worthy organizations.

Recently, the Arkins made a $500,000 gift to support the Institute's cataract surgery program, which is led by William W. Culbertson, M.D., professor and holder of the Lou Higgins Distinguished Chair in Ophthalmology.

Thanks to their generosity, the Shirley and L. Jules Arkin Laser Vision Center opened at Bascom Palmer's Anne Bates Leach Eye Hospital in Miami to provide state-of-the-art treatments to patients from all walks of life who need surgery to retain or restore their vision. "I tell all my friends not to give up hope," says Shirley. "Bascom Palmer may have the answer for you."

Alumni Give Back

With nearly two decades separating their training at Bascom Palmer, ophthalmologists Mark Daily and J. William Harbour had not met before last year when Harbour was awarded the Mark J. Daily, M.D., Endowed Chair.

Dr. Mark Daily

Daily, a 1970s graduate of Bascom Palmer's residency and fellowship program, is the first Bascom Palmer alumnus to fully fund a chair at the Institute. "I was moved to give this gift to Bascom Palmer out of appreciation for the gift it gave me," Daily says. "Bascom Palmer gave me outstanding mentors and exceptional training that made my career in ophthalmology possible. I hope this gift will help the Institute continue its long tradition of discovery and excellence that has saved or restored the sight of countless people around the world."

Following his training at Bascom Palmer, Daily established a successful vitreoretinal practice at Wheaton Eye Clinic in Illinois. He joined the faculty at Loyola University Stritch School of Medicine and now serves as clinical professor of ophthalmology at Hines Veterans Hospital. "They say that a good doctor can do a very good job in taking care of eyes but an excellent doctor takes care of patients, and that's what I learned at Bascom Palmer," says Daily.

"In this time of increasing economic challenges, it becomes more and more difficult to not only perform research, but to train the next generation of physicians and scientists," Harbour says. "I am honored to hold the inaugural Daily Chair which will be directed to retinal research programs. This will allow Bascom Palmer to move quickly in new innovative areas of training and research."

Dr. Gordon Miller

Miami Beach ophthalmologist GORDON R. MILLER, M.D., had plans to follow a career in internal medicine. His plans were shelved in favor of a career in ophthalmology because of Dr. Edward W. D. Norton, the founding chairman of Bascom Palmer. "Dr. Norton was a remarkable man who was like a guiding light to me," says Miller.

Following medical school at Washington University School of Medicine, Miller completed a residency in ophthalmology at Bascom Palmer and served as chief resident in 1966. Known for his wonderful sense of humor, Miller adds, "I like to think that I was Dr. Norton's favorite resident!" Miller says that Norton was tireless, not only in his efforts to recruit a great faculty to Bascom Palmer, but also to serve his fellow man. "Whenever there was a question regarding a diagnosis or a problem with a patient, Dr. Norton was always available to answer questions and to teach, teach, teach."

Miller launched a long and successful career as an ophthalmologist in private practice in Miami Beach, specializing in oculoplastics. Following Norton's personal example of service, Miller taught at the Miami Veteran's Administration Hospital for 15 years as a voluntary faculty member. As a Bascom Palmer "alumnus," and throughout his career, Miller has shared his time, energy and expertise to support Bascom Palmer's mission of medical education. He is also a long-time supporter of the Mary and Edward Norton Library of Ophthalmology at Bascom Palmer.

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RECEIVED

April 9, 1965

Dr. Gordon R. Miller
Washington University
School of Medicine
St. Louis, Missouri

Dear Gordon:

I would like to offer you a position as first year resident in Ophthalmology beginning July 1, 1965, here at Jackson Memorial Hospital, University of Miami School of Medicine.

If you are in a position to accept this offer, please let me know at your earliest convenience.

Sincerely yours,

Edward W. D. Norton, M.D.
Chairman, Department of Ophthalmology

EWDN:ts

In honor of Norton, Miller's estate plans include a generous bequest to create the Gordon R. Miller Endowed Chair in Oculoplastics. As he says, "This gift is a tribute to the Chief [Dr. Norton] and the great institution he founded."

A Transformational Gift

Drs. Eduardo Alfonso, Nasser Ibrahim Al-Rashid and David Tse

One of the world's most prominent businessmen and leading philanthropists has donated $10 million to Bascom Palmer to establish an interdisciplinary research center dedicated to eradicating blinding injuries and lethal orbital malignancies.

The gift from Saudi Arabia builder Nasser Ibrahim Al-Rashid, Ph.D., the founder and chairman of Rashid Engineering in Riyadh, Saudi Arabia, has established the Dr. Nasser Ibrahim Al-Rashid Orbital Vision Research Center at Bascom Palmer.

Al-Rashid, who lost vision in one eye as a child, credits Bascom Palmer's David T. Tse, M.D., for preserving the sight in his other eye. For more than 20 years, Al-Rashid has supported Tse's work to advance research in finding life-saving solutions for conditions that are dear to Al-Rashid's heart: orbital cancers and children born without an eye. Tse, professor of ophthalmology and holder of the Dr. Nasser Ibrahim Al-Rashid Chair in Ophthalmic Plastic, Orbital Surgery and Oncology, will serve as director of the new center.

The Center will be the first cure-based orbital research laboratory of its kind. It will assemble a broad array of research scientists and clinicians who are focused on finding novel therapies for orbital cancers and traumatic optic nerve injuries, as well as clinical applications for stem cell and biomedical studies.

"In addition to basic scientific research, the Center will serve as a focal point for attracting scholars from around the world to Bascom Palmer for ophthalmic learning and to exchange educational ideas for mutual gain," Tse says. "We view this Center as the incubator for the next generation of thought leaders in orbital surgery."

Tse believes that Al-Rashid's gift will have a profound impact on scientific discovery. He adds, "Such thoughtful generosity is the foundation that enables Bascom Palmer to advance its research efforts to improve vision and patient care."

Planned Gifts Provide Invaluable Benefits

At Bascom Palmer, our success in the battle against eye disease is perpetuated by the philanthropy of countless friends and benefactors. Donors are the driving force behind our goal to combat and cure eye disease. Their investments are reflected in the eyes of thousands of men, women and children around the world.

Current giving or gifts of cash, securities or property during an individual's lifetime are gratefully received and acknowledged. Gifts of $1,000 or more are recognized on the pages of ***Images*** and in our recognition societies.

Planned gifts may be made through a donor's will or through a variety of charitable gifts, trusts or annuities that may provide benefit to you and your loved ones during your lifetime, with Bascom Palmer being the eventual beneficiary. Your tax or estate attorney or financial advisors are familiar with these giving vehicles and will be pleased to assist you in selecting the most appropriate plan for your needs. The University of Miami's office of planned giving is also available to advise donors interested in investing in Bascom Palmer.

If you have named Bascom Palmer Eye Institute as a beneficiary of your will or another planned giving instrument, please let us know so we may thank you and give you the recognition you deserve.

For more information on planned giving, please contact Ileana Daly-Bronstein, executive director of development, at 305-326-6190 or e-mail ibronstein@med.miami.edu. *We thank you for your investment in Bascom Palmer.*

Evening of Vision Gala Co-chairs, Ms. Ari Rifkin and Ms. Lois Pope

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A Mother's Last Wish Comes True *page 18*