Bascom Palmer Eye Institute[®]| University of Miami Health System

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ISSUE 2

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Bascom Palmer Leads Fight Against Glaucoma

Patient Receives Bionic Eye

18 Professors Honored for Excellence 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.



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Dear Friends and Colleagues:

A decade ago, Bascom Palmer made a commitment to deliver universitybased ophthalmology care to patients in Southwest Florida. Since opening our initial Naples facility in 2004, our clinical team has provided state-of-theart diagnostic and treatment services to an increasing number of residents.

We are celebrating the opening of our \$25 million, 20,000-square-foot, stateof-the-art eye care center, funded through Bascom Palmer's Ophthalmology

Research Foundation and the generosity of the Naples community. As Stephen G. Schwartz, M.D., M.B.A., medical director of Bascom Palmer Eye Institute at Naples, says, "Bascom Palmer is coming to you."

Today, Bascom Palmer's clinical, research and educational "reach" stretches around the world. Next year, we will open our first international eye center in the United Arab Emirates. This beautiful new facility in Abu Dhabi will include our three core missions: clinical care, education and research. It will be staffed by Bascom Palmer Eye Institute. It will also feature a video conferencing theater and auditorium for education in eye care.



At Bascom Palmer, we are investing in the future

of ophthalmology in other ways as well. In this issue of *Images*, you can read about the advances our researchers and clinicians are making in the fight against glaucoma, including new medications that could have a neuroprotective effect on retinal nerve cells. Another article describes how our surgeons were able to implant a "bionic eye" in a patient with severe retinitis pigmentosa and achieve a dramatic improvement in vision.

Our worldwide leadership in research, education and clinical care would not be possible without the generous support of donors who share our passionate commitment to excellence. In that spirit, this issue highlights 18 faculty members who have been recognized with endowed chairs for their remarkable accomplishments.

For more than five decades, Bascom Palmer Eye Institute has been dedicated to providing the finest possible ophthalmic care, finding new ways to treat vision problems and prevent blindness, and educating the physicians and researchers of the future. Thank you for your support as we continue our tradition of excellence in every aspect of Bascom Palmer.

Sincerely,

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

Leading the Fight

Bascom Palmer's Clinicians and Researchers Deploying New Strategies and Technologies to Help Patients Preserve Vision

> For more than 50 years, Bascom Palmer's researchers and clinicians have been leading the fight against glaucoma, one of the leading causes of blindness throughout the world. Now, advancements in optical imaging technology have provided insights into the structural changes in the eye that can signal a loss of vision. Other researchers are studying the genetic

linkages – why glaucoma rates are higher in certain groups of people and the genes that may cause or increase the risk of developing glaucoma.

On the clinical side, Bascom Palmer's physicians are trying medical approaches and surgical advancements to delay or halt the progression of the disease. And perhaps most exciting of all, studies are well underway on finding neuroprotective medications that could prevent the death of nerve cells in the retina and stop the disease in its tracks.

"The battles against glaucoma are being fought on many levels," says Richard K. Parrish, II, M.D., professor and Edward W.D. Norton Chair of Ophthalmology. "While we still don't understand the basic mechanism, we have made great strides in diagnosing glaucoma –



Drs. Ashley Crane, Scott Walter and Steven Gedde

even before symptoms occur – and in treating this blinding disease through medication and surgery."

Glaucoma affects more than three million Americans and is responsible for 15 percent of world blindness. It is a family of ocular diseases characterized by progressive damage to the retinal ganglion cells that capture visual images, and the optic nerve, which carries those images to the brain. Vision loss from glaucoma is irreversible.

Bascom Palmer's researchers are making significant progress in identifying genetic, metabolic and chemical precursors to the disease, using experimental and clinical models, as well as cutting-edge optical imaging technology developed at Bascom Palmer and not available anywhere else in the world.

Against Glaucoma



"The common understanding has been that patients lose sight because they lose their retinal ganglion cells," says Vittorio Porciatti, D.Sc., professor of ophthalmology, vice chairman of research, and holder of the James L. Knight Professorship in Ophthalmology. "However, those retinal nerve cells become dysfunctional long before they actually die. If we can arrest that process before there are clinical symptoms, we could save the patient's vision."

Treating high eye pressures

Glaucoma often involves high levels of pressure inside the eye. The front part of the eye is filled with a clear fluid called aqueous humor that nourishes nearby tissues and then leaves the chamber through drainage channels at the "angle" where the iris inserts into the "sclera," or white of the eye. Usually, the fluid flows smoothly through the trabecular network, a meshwork-like drainage system, keeping eye pressure at a normal level.

But in open-angle glaucoma, the most common type, the eye drainage system does not work properly. Instead, the fluid builds up, creating high intraocular pressure (IOP) that damages the sensitive optic nerve and results in gradual vision loss. However, there are other forms of the disease as well, including angle closure glaucoma, which is more prevalent in people of Asian origin, pseudoexfoliation glaucoma, pigmentary glaucoma, angle recession glaucoma and neovascular glaucoma.

Bascom Palmer's ophthalmologists see glaucoma patients from newborn infants to seniors. Individuals with high risk for glaucoma include people over age 60, those with a family history of glaucoma and people of African descent over age 40. Hypertension, diabetes and other systemic diseases are also risk factors. Among Hispanics, glaucoma is the most common cause of blindness.

"Treating glaucoma is a forte of Bascom Palmer Eye Institute," says Parrish. The Institute's first glaucoma specialist, Douglas R. Anderson, M.D., professor of ophthalmology and the Douglas R. Anderson Chair in Ophthalmology, has been at the forefront of glaucoma research for more than 50 years. He discovered that elevated intraocular pressure impairs axonal transport in the optic nerve and is affected by glaucoma. Paul F. Palmberg M.D., Ph.D., professor of ophthalmology, coined the term "target pressure" and helped to clarify the relationship between the level of pressure in the eye and how well a glaucoma patient retains peripheral vision.

Today, clinicians have found that most types of glaucoma respond well to medication if diagnosed at an early stage, says David S. Greenfield, M.D., professor of ophthalmology. Greenfield has a particular interest in the treatment of patients with open-

WHAT IS GLAUCOMA?

Glaucoma is a leading cause of blindness in the United States, especially for older people. But loss of sight from glaucoma can often be prevented with early treatment.

RISK FACTORS FOR GLAUCOMA

FAMILY HISTORY OF GLAUCOMA

AGE 60+

■ ABNORMALLY HIGH INTRAOCULAR PRESSURE

AFRICAN DESCENT, AGE 40+

- PAST EYE INJURIES
- DIABETES

Regular eye examinations by an ophthalmologist are the best way to detect glaucoma.

To schedule an appointment with a glaucoma specialist, please call 1-888-845-0002 or visit us online at bascompalmer.org angle glaucoma and normal IOP, also referred to as "normal-tension glaucoma." He served as principal investigator for a randomized multi-site clinical trial entitled the "Low-Pressure Glaucoma Treatment Study (LoGTS)," which demonstrated that certain medications have a more beneficial impact in delaying the loss of visual field – an effect that appeared to be unrelated to the ability to lower IOP.

Greenfield is collaborating with Arindel S. Maharaj, M.D., Ph.D., assistant professor of clinical ophthalmology, to study the relationship between low systemic blood pressure and glaucoma progression. "We have been collecting and analyzing 24-hour ambulatory blood pressure data in patients with glaucoma progression despite excellent intraocular pressure control," Greenfield says. "We believe that low blood pressure leads to poor optic nerve circulation and represents a major risk factor for glaucoma progression."

In addition to his clinical, educational, and research responsibilities, Greenfield serves as president of the American Glaucoma Society (AGS), an ophthalmic subspecialty organization consisting of more than 1,000 members, including 800 glaucoma surgeons practicing in the United States. The AGS is the largest Society of subspecialty-trained glaucoma surgeons worldwide.

Advancing surgical treatments

When medication alone cannot lower IOP, various types of surgery are available to open or bypass the trabecular drainage system and reduce intraocular pressure. "Surgical pressure lowering is a very effective means of preventing further



Dr. David Greenfield



Dr. Arindel Maharaj



Dr. Richard Parrish

visual field loss in patients with uncontrolled glaucoma," Greenfield says. His recent work in collaboration with Tracy M. Wright, M.D., assistant professor of clinical ophthalmology, has shown that in some patients, the visual field can actually improve following surgery for glaucoma. "This indicates that lowering of IOP not only prevents visual field degradation, but can actually enhance visual sensitivity in areas of the visual field that have been depressed by glaucoma damage," Greenfield says.

One of the major questions for ophthalmologists has been what type of glaucoma surgery produces the best long-term results. Steven J. Gedde, M.D., professor of ophthalmology and the John G. Clarkson Chair in Ophthalmology, was the lead investigator of the international "Tube Versus Trabeculectomy (TVT) Study," a five-year (and ongoing) multicenter clinical trial that evaluates these two types of surgical procedures for patients with a failed prior eye surgery.

"Similar degrees of pressure reduction were observed with both groups, but there was a higher success rate in the tube shunt group," Gedde says. "That group had a much lower rate of followup surgeries, while the trabeculectomy patients needed additional surgery to control pressure."

Gedde says this landmark clinical



trial has supported Dr. Helen Kornmann

a shift in practice patterns, as Medicare data and surveys of AGS members show that tube shunts are increasingly being utilized as an alternative to trabeculectomy. The TVT study also prompted another multicenter clinical trial, also led by Gedde, the "Primary Tube Versus Trabeculectomy Study (PTVT)" involving patients without previous ocular surgery. "We expect that the PTVT study will provide valuable information to guide patient care," Gedde says.

Helen Kornmann, M.D., Ph.D., assistant professor of clinical ophthalmology, is leading a prospective randomized clinical trial evaluating the use of topical nonsteroidal anti-inflammatory drugs (NSAID) after tube shunt implantation. "A topical NSAID may beneficially affect the healing process following tube shunt surgery and further enhance the success of the procedure," says Kornmann.

Bascom Palmer is also a leader in minimally invasive glaucoma surgery. Alana Grajewski, M.D., professor of clinical ophthalmology, and Ta Chen P. Chang, M.D., assistant professor of clinical ophthalmology, are among the first surgeons in Florida performing gonioscopy-assisted transluminal trabeculotomy (GATT) on adults.

Bascom Palmer's bioengineering team has also spent more than two decades developing an innovative microdrainage shunt to keep the drainage system open without inflaming nearby tissues.

Jean-Marie Parel, Ing.ETS-G, Ph.D., research associate professor of ophthalmology, Henri and Flore Lesieur Chair in Ophthalmology, and director of Bascom Palmer's Ophthalmic Biophysics Center, began discussing a potential microshunt with Parrish in the 1980s and continued working with the late Francisco E. Fantes, M.D., professor of clinical ophthalmology, in the 1990s. "Francisco wanted something simple and easy to implant that would last forever," says Parel. "But it wasn't until Leonard Pinchuk, Ph.D., D.Sc. developed a synthetic biomaterial that Francisco's dream could become a reality." Pinchuk is a polymer chemist and entrepreneur, as well as a distinguished research professor of biomedical engineering at the University of Miami.

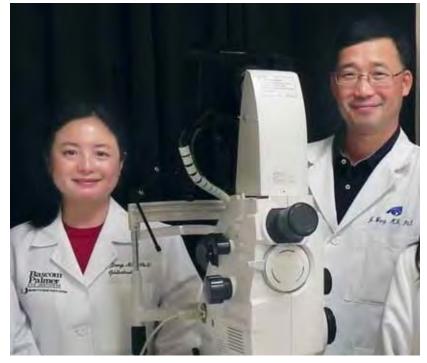
Bascom Palmer researchers are collaborating with the Laser Center in the Dominican Republic to conduct clinical trials using the microshunt. Their research was presented at Bascom Palmer's 2014 educational program, CURSO Interamericano.

Using sophisticated imaging

Luis E. Vazquez, M.D., Ph.D., assistant professor of clinical ophthalmology, is using sensitive optical coherence tomography (OCT) instruments and analytics to better understand the structural changes in the retinal ganglion cells and the bundle of fibers in the optic nerve – the key pathway for visual signals traveling from the eye to the brain. This is important because early detection of glaucoma and disease progression translates to timely treatment and prevention of vision loss.

"We are analyzing the volume of those nerve fibers, instead of the traditional one-dimensional approach of measuring the thickness," Vazquez says. "This improved detection ability lets us see the damage at an early stage, and it also helps our clinicians manage patient care more effectively."

Bascom Palmer's powerful imaging technology can detect changes to the nerve cells at the level



Dr. Hong Jiang and Dr. Jianhua (Jay) Wang



Dr. Luis Vazquez

of a micron (one-millionth of a meter). "We are developing new higher order mathematic algorithms to analyze the micro-anatomy of the eye," says Richard K. Lee, M.D., Ph.D., associate professor of ophthalmology. "We can see changes well before they are visible to the doctor and before they affect the vision of patients so that diagnosis can be made as early as possible to minimize vision loss."

Bascom Palmer's state-of-the-art imaging equipment includes a novel polarization-sensitive optical coherence tomography (PS-OCT) developed at the Institute by Jianhua (Jay) Wang, M.D., Ph.D., M.S., associate professor of ophthalmology, and Hong Jiang, M.D., Ph.D., assistant professor of ophthalmology.

"We spent one year and a half developing this new version of OCT, which allows us to analyze the depth of the entire retinal layer penetrated by light," says Wang. "It will enable us to run clinical studies for early signs of visual impairments in the microstructures of the eye."

Wang adds that the high resolution of the PS-OCT system will also help scientists studying diabetes, multiple sclerosis and other diseases that lead to neurodegeneration in the eye. "We are already running studies for tracking retinal degeneration in neurological diseases, such as multiple sclerosis and Alzheimer's disease. We also hope to put this imaging system into the hands of clinicians at hospitals around the world, helping them to study different conditions of the eye."

Improving monitoring and screening

"Previously, glaucoma monitoring consisted of periodic IOP measurements and annual visual field testing to detect changes," says Greenfield. "Now, the standard of care includes sophisticated digital imaging of the optic nerve and surrounding retinal nerve fiber layer as an adjunct to visual field testing. In many patients this has remarkably enhanced our ability to identify optic nerve damage years before vision loss has occurred."

Since glaucoma is a chronic, progressive "thief of vision," ophthalmologists need the best possible monitoring and screening tools, says Parrish. "A typical screening looks only at elevated IOP," he adds. "However, as many as one-third of glaucoma patients have a normal eye pressure and may not be diagnosed until they have suffered a significant loss of vision."

Screening is particularly important for high-risk populations, such as African-Americans, Afro-Caribbeans and Hispanics. "Haitian-Americans have some of the highest rates of glaucoma in the world," says Lee. "There is clearly a genetic link."

Lee collaborated with Parrish in a recent study, "Glaucoma Screening in the Haitian Afro-Caribbean Population of South Florida." The study found that many Haitian-Americans under age 40 have early warning signs such as high eye pressures and suspicious changes to the optic disc.

Lee is also medical director of ophthalmology

for Project Medishare, a University of Miami Miller School of Medicine initiative to improve healthcare in Haiti. "We initiated a laser therapy program to reduce the IOP in glaucoma patients, helping to save their vision since many of these glaucoma patients have no access or economic resources Dr. Richard Lee

to pay for glaucoma



medications," he says. Lee is also the medical director for community ophthalmology where he leads groups of medical students from the Ophthalmology Interest Club along with ophthalmology residents and fellows from Bascom Palmer, to screen patients for glaucoma, especially in economically challenged and high-risk populations. Lee and neuro-ophthalmologist Byron L. Lam, M.D., professor of ophthalmology and the Robert Z. & Nancy J. Greene Chair in Ophthalmology, are analyzing the results of these vision screenings to develop approaches for better detection and more efficient screening of patients for glaucoma.

Searching for potential causes

While high IOP has long been known to lead to glaucoma, Bascom Palmer's researchers are trying to identify other potential causes that could result in better treatments. For instance, Lee is an investigator in two NIH-funded studies — one on the genetics of pseudoexfoliation glaucoma and another on the genetics of open angle glaucoma. These international studies involving institutions in Europe, Asia and the United States have already produced a number of important and high profile findings on genetic risk factors for glaucoma.

Parrish notes that while many glaucoma patients benefit from pressure lowering, a sizeable percentage continue to have optic nerve damage. "So, we have to look beyond the obvious IOP for other risk factors," he adds.

Parrish says there are a number of potential culprits, such as sleep apnea. "Some people don't breathe normally when asleep, and that can result in a low level of oxygen that may starve the optic nerve," says Parrish, who is studying the issue with researchers at the University of Miami Sleep Center, located within Bascom Palmer's Miami eye center.

With support from the National Institutes of Health (NIH), Porciatti has been using noninvasive electrophysiology tools to track 600 adult patients with a family history of glaucoma, elevated IOP or another high-risk indicator. "We want to see what happens with the retinal ganglion cells in patients that develop glaucoma," Porciatti says. He is also tracking the physiological response of retinal ganglion cells under stress to identify susceptible subjects upon head-down body posture, which temporarily increases intraocular pressure.

"We need a better way to identify whether a patient who is at risk for glaucoma is a good candidate for treatment before prescribing expensive eye drops for the next 20 or more years," he says. "Our studies may point clinicians in the right direction."

The role of lipids

Currently, Sanjoy K. Bhattacharya, Ph.D., M.Tech., professor of ophthalmology, is studying the role of lipids in glaucoma. Long known for their role in heart disease - both positive and negative – lipids are hydrophobic compounds that are also found in the eye. For more than a decade, Bhattacharya has been seeking to identify endogenous non-prostanoid lipids that could be potentially used for treatment of glaucoma without causing inflammation. Cur-



rently prostanoids are the only class of lipids that are used for glaucoma treatment. Prostanoids were originally discovered in 1955 in the iris, and became the first commercial glaucoma medication in 1997. No other class of lipids has ever been investigated for glaucoma therapy, which was a key motivating factor for Bhattacharya's research.

About four years ago, Bhattacharya and Lee began looking at the lipid differences between aqueous humor fluid and anterior chamber tissues of normal eyes and those of glaucoma patients. "We felt that if there were missing lipids with the disease, restoring those lipids to the eye could potentially help stop the progression of glaucoma," he says.

In addition to his ongoing funded research, Bhattacharya recently received a three-year, \$999,998 grant from the U.S. Department of Defense to study the use of lipids to help patients who have suffered a traumatic injury to the eye resulting in glaucoma.

Focusing on neuroprotection

Several Bascom Palmer researchers are focusing on neuroprotective strategies to keep retinal ganglion cells alive and healthy. "We may be able to make these nerve cells more tolerant of high pressures," says Vazquez. "If we can increase the stability and health of the fibers that make up the optic nerve, Dr. Sanjoy Bhattacharya



Dr. Ta Chen P. Chang

this may change the course of treatment for glaucoma. We can accomplish this by strengthening the synaptic connections that retinal ganglion cells make with the rest of the retina, and our lab is focused on finding key synaptic molecules. If we can increase the stability and cellular health of the fibers that connect with the optic nerve, this may change the course of treatment for glaucoma."

Lee says the human visual system resembles an old-fashioned telephone switchboard. Each of the 1 million or so retinal ganglion cells is "hard-wired" to another cell in the brain. When those cells die, those visual connections are lost and the image gradually decreases in clarity, like losing pixels in a digital photo.

"Replacing those lost retinal nerve cells – through stem cell or other therapy – is not enough to restore vision," Lee says. "That's because the signal from a new cell doesn't know where to go in the brain."

Instead, Lee is looking at cellular and molecular ways to use stem cells to provide nutrients and other support for the endangered retinal ganglion cells to keep them healthy and transmitting to the brain. "All cells have to work closely with their neighbors, so implanting stem cells can help improve the functioning of retinal ganglia cells." Lee and Bhattacharya call their innovative approach "neuro-rejuvenation." They have recently created a novel approach to stimulating the function of retinal ganglion cells that preserves the cell connections to the brain after ocular trauma.

Lee and Bhattacharya are also testing a new class of molecules that lower IOP in the eye in experimental models. Lee adds that the University of Miami is obtaining patent protection for their collaborative new drug discovery, and the next step will be clinical trials.

Treating Pediatric Glaucoma

Bascom Palmer is one of the few institutions with deep expertise in treating pediatric glaucoma. "You need to address the child's visual development as well as the glaucoma," says Ta Chen P. Chang, M.D. "Our care team does both" he says. "We also put an emphasis on helping children and parents understand how to deal with the disease."

Alana Grajewski, M.D., says Bascom Palmer's integrated approach to pediatric glaucoma includes genetic testing services and lowvision specialists who can help maximize a child's available eyesight. "Some children may have glaucoma as part of another congenital syndrome. We work closely with other specialists at the University of Miami to provide carefully coordinated care and support services," she says.

Bascom Palmer will enter a new era in pediatric care with the construction of the Samuel and Ethel Balkan International Pediatric Glaucoma Center, made possible by a \$2 million gift from Donna Mae Balkan Litowitz in memory of her parents.

Construction for the center will begin later this year, according to Grajewski, who will be the director of the new center. "This will be an ideal home for providing our integrated care, and will serve as the hub for international collaboration on research and treatment of pediatric glaucoma," she says. "It builds on the work of Elizabeth Hodapp, M.D., associate professor of clinical ophthalmology, who helped establish the first pediatric glaucoma clinic at Bascom Palmer and is still a vital part of our team."

Grajewski is recognized as a leader in this field, including the establishment of a global Childhood Glaucoma Research Network in 2013, which today includes more than 200 members in 38 countries. Through this network, Bascom Palmer is playing a key role in the International Pilot Survey of Childhood Glaucoma, which is designed to provide a "snapshot" look at the types of childhood glaucoma, treatments, and outcomes at large eye centers worldwide.

In addition, Grajewski, Chang, and Kara M. Cavuoto, M.D., assistant professor of clinical ophthalmology, are in the process of validating a Congenital Glaucoma Severity Scale, which will allow the projection of a "severity slope" to predict outcomes in pediatric patients. It is the first such severity scale to take into account both glaucoma damage and obstacles of visual development.

As Grajewski says, "If you can make a glaucoma diagnosis quickly and treat it promptly, there is a high probability that the child will develop normal or near-normal vision. But if pediatric glaucoma is not treated, the result is a devastating loss of vision."

New research directions

Valery I. Shestopalov, Ph.D., professor of ophthalmology, is using a combination of high-throughput technologies with molecular and transgenic approaches to find potential targets for glaucoma medications. "Existing glaucoma therapies are all based on lowering IOP," he says. "We need to develop different strategies and identify new targets to improve treatment. When we understand the molecular mechanisms that cause neurons to die, we can block one or several components of this pathway and this will become a major step forward toward improved preservation of vision."

Shestopalov's project started in 2004 with reconstructing a disease-disrupted network of cellular interactions between neurons and glial cells and building a bioinformatics model of glaucoma. "This approach proved to be very effective for identification of pathogenic molecules, which are the new targets for therapeutic interventions in glaucoma," he adds.

Recently, Shestopalov found that the cell communication channel Pannexin1 (Panx1) is the "Achilles' heel" of injured retinal neurons. Teaming with colleagues at Cornell University, Scripps Research Institute, and institutes in Canada and Europe,



Dr. Tracy Wright



Dr. Valery Shestopalov

Shestopalov found that the Panx1-mediated mechanisms actively contribute to several disorders, such as glaucoma, retinal ischemia and ischemic optic nerve stroke.

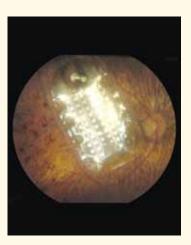
"Our leading hypothesis states that uncontrolled activation of these molecular channels triggers a death spiral in retinal ganglion cells," he says. "This suggests the Panx1 pathway as a novel target for therapy in these blinding pathologies."

Since the only Panx1-blocking drug, probenecid, is nearly a century old and is not truly specific, Shestopalov is developing a more specific drug to be tested in these diseases. In 2013 he started screening for new inhibitors and established a new collaboration with a life sciences company to develop a new generation glaucoma drug.

Reflecting on Bascom Palmer's ability to deliver leading-edge patient care while advancing medical knowledge, Shestopalov says, "This is an exciting time for all of us in glaucoma research. We are continuing to make solid progress in the worldwide struggle against this blinding disease." "This is an exciting time for all of us in glaucoma research. We are continuing to make solid progress in the worldwide struggle against this blinding disease."

> – Valery I. Shestopalov, Ph.D.

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



Bionic Eye Delivers Dramatic

After 16 years of blindness, Carmen Torres can finally see the light. Thanks to an

A retinal implant from the Argus[®] II Retinal Prosthesis System, also known as the "bionic eye." It is intended to It i

Last fall, Torres became the first patient in Florida to receive the Argus II Retinal Prosthesis System, which delivers electrical stimulation to the retina to restore visual perception in patients with severe retinitis pigmentosa (RP), like Torres who can no longer see. Currently, the Argus system is only approved for "compassionate use" for patients with severe vision loss due to advanced RP.

"I am very happy and satisfied with the results of this experimental procedure," says Torres. "I can watch my grandson roll a ball across the carpet in my living room, catch it, and roll it back to him. I also love the way my eyes look – there is no difference from before I had the surgery."

Growing up in Puerto Rico, Torres didn't think about her vision until she was diagnosed with RP at the age of 18. "I continued with my life, driving a car, going to college and raising my family," she says. But she began losing her vision and became blind at age 45. "I had one daughter in college, another in high school and a son in kindergarten," she says. "Then, one day, I couldn't see myself in the mirror."

Having moved from Puerto Rico to Wisconsin to Tampa, Torres talked with her ophthalmologist who told her there was no cure for RP. But Torres refused to give up hope. She began researching the possibility of getting an artificial eye. "When I heard that the Argus system had been approved in the U.S., I jumped up and cheered," she says.

First, Torres' local ophthalmologist tested her optic nerve to see if it would be able to handle the new electrical input from the bionic eye. After getting the okay, Torres reached out to Bascom Palmer's Byron L. Lam, M.D., professor of ophthalmology and the Robert Z. & Nancy J. Greene Chair in Ophthalmology. "Dr. Lam conducted extensive testing and told me I was the perfect candidate for the implant," she says.

After learning more about the surgery and recovery from Lam and Janet L. Davis, M.D., professor of ophthalmology and the Leach Chair in Ophthalmology, Torres gave a thumbs up for the surgery. "I trust my doctors and Bascom Palmer and told them to move forward," she says.

A specialist in neuro-ophthalmology, RP and other types of retinal degeneration, Lam says the Argus retinal system is a big leap forward in patient care. "The bionic eye allows people with advanced retinal disease to have a small field of vision that is typically about 4 by 5 inches," he says. "This is usually enough

HOW IT WORKS

The Argus® II Retinal Prosthesis System provides electrical stimulation of the retina to induce visual perception in blind patients with severe to profound retinitis pigmentosa. A miniature video camera housed in the patient's glasses captures a scene. The video is sent to a small patient-worn computerized video processing unit where it is processed and transformed into instructions that are sent back to the glasses via a cable. These instructions are transmit-

ted wirelessly to an antenna in the retinal implant. The signals are then sent to the electrode array, which emits small pulses of electricity. These pulses bypass the damaged photoreceptors and stimulate the retina's remaining cells, which transmit the visual information along the optic nerve to the brain,

creating the perception of patterns of light. Patients learn to interpret these visual patterns with their retinal implant.

from the Argus® II **Retinal Prosthesis** System, also known as the "bionic eye." It is intended to provide electrical stimulation of the retina to induce visual perception in individuals with severe vision loss or blindness from retinitis pigmentosa, a rare inherited degenerative eye disease.

Photograph by Brandon Sparling, senior ophthalmic photographer, Bascom Palmer's Estelle and George G. Rosenfield Imaging and Macula Center

Illustration of the Argus Bionic Eye on page 11 by Second Sight

Results

for a patient to identify objects and move more freely around his or her home. While this technology is still in the early stage, it's clear that even a little vision can improve a patient's mobility, quality of life and sense of well-being."

Retinitis pigmentosa is a group of genetic diseases that cause progressive degeneration of the retina in

both eyes. During later stages, patients experience a progressive loss of peripheral vision that leads to blindness. Researchers at Bascom Palmer's Retinal Degeneration Center are studying the genetic causes and possible treatment options for RP. Unfortunately, there is currently no cure for this blinding disease.

However, many patients with progressive RP may continue to perform daily tasks with the help of low vision aids. Bascom Palmer Eye Institute has a Low Vision Clinic to assess patients' remaining vision, prescribe appropriate low vision aids and train patients in their proper use.

A similar low-vision patient education and training strategy is necessary with the Argus II Retinal Prosthesis System, which is made by Second Sight, a California medical device manufacturer. About 100 patients worldwide have gotten this bionic eye in the past two years.

"We would implant the system on a case-by-case basis," says Davis."The ideal patient is someone like Carmen who has been resourceful in adapting to blindness, while learning new skills. The patient also needs an otherwise healthy eye in order to tolerate the surgery."

The Argus system includes several components. First, a tiny photosensitive array of electrodes is implanted on the retina. After recovering from the surgery, the patient begins wearing special glasses with a miniature video camera that captures a visual scene.

The signals from the camera are sent to a small computer called a video processing unit that can be attached to a belt or carried in a pocket or purse. The reprocessed signal is then sent back to the glasses and transmitted wirelessly to an antenna in the retinal implant. This causes the implant to emit small pulses of electricity that bypass the damaged photoreceptors in the eye and stimulate the retina's remaining cells, which transmit the visual information along the optic nerve to the brain, creating the perception of patterns of light. "Patients must learn to interpret these

visual patterns with their retinal implant," says Davis. "It's not like other types of surgery to restore vision. The patient has to be a participant in the process. Carmen was able to describe what she was seeing, so the Second Sight trainers and technicians could make gradual adjustments and fine-tune her device to function for both inside and outside light."

Torres' surgery at Bascom Palmer took about six hours. After an overnight stay, Torres went home to Tampa to begin her visual training.

Five months after her surgery, Torres received a software upgrade from Second Sight for her prosthetic system. "Now, I can see my hand, leg, coins on a table and light from our fireplace," she says. "I can clean the table with a white napkin and see contrasting patterns, such as stripes or lines. I can't see faces because there is little difference between the dark and light areas."

Reflecting on her experience, Torres says the bionic eye is not for everyone. "You have to retrain your eye to interpret the signals, and that takes long hours and many days. Getting this implant is a personal decision. For me, it's been a great improvement in my life and I'm very grateful to Bascom Palmer for making it happen."

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

18 Professors Honored

Bascom Palmer Eye Institute's worldwide leadership in research, education and clinical care would not be possible without the generous support of donors who share the Institute's passionate commitment to excellence in ophthalmology.

In that spirit, this issue of *Images* highlights 18 of our faculty members who have been recognized with endowed chairs for their remarkable accomplishments at Bascom Palmer. As former University of Miami President Donna Shalala says, "Endowed chairs are the highest honor we can give at a great research university. They offer many benefits to the recipients, the university and our students, who can learn from world-class professors year after year. It is both an honor to the named holder of the chair and also an enduring tribute to the donor who established it."

These distinguished physicians and scientists provide a clear indication of the unparalleled level of talent that can be found throughout Bascom Palmer.

EYE ON HISTORY

IT IS BELIEVED THE EARLIEST ENDOWED CHAIRS WERE ESTABLISHED IN 176 BY THE ROMAN EMPEROR MARCUS AURELIUS, THIS **RECOGNITION WAS ADAPTED CENTURIES** LATER IN 1502 WHEN MARGARET BEAUFORT, COUNTESS OF RICHMOND AND DERBY, MOTHER OF HENRY VII, ESTABLISHED THE LADY MARGARET PROFESSORSHIP OF DIVINITY OF THE UNIVERSITY OF OXFORD IN ENGLAND. AT THE TIME, **ROYALS AND HIGH CHURCH OFFICIALS** BEGAN REWARDING ACCOMPLISHED TEACHERS WITH A LIFETIME INCOME, THE TITLE OF "PROFESSOR" AND AN ACTUAL "CHAIR" TO SYMBOLIZE THEIR STATUS. THIS CUSTOM LIVES ON TODAY IN "ENDOWED CHAIRS" AT UNIVERSITIES THROUGHOUT THE WORLD.

Bascom Palmer Eye Institute's chairman, **EDUARDO C**. **ALFONSO, M.D.**, proudly holds the endowed chair named in honor of Kathleen and Stanley J. Glaser that supports research and educational efforts by the department chairman. Stanley Glaser was the founding chairman of the Board of Governors of Bascom Palmer's Anne Bates Leach Eye Hospital, a position he held for 19 years. Alfonso was appointed interim chairman in 2007, and chairman in 2009, with the objective of propelling the internationally acclaimed institution to even greater heights by becoming the world leader in ophthalmology, education and vision research.

Alfonso is known for his clinical expertise and research in eye diseases, corneal surgery, corneal transplantation and ocular microbiology. Physician, surgeon, professor and researcher, Alfonso is an internationally known expert on ocular infectious diseases and serves as medical director of Bascom Palmer's Ocular Microbiology Laboratory.

"For more than 50 years, Bascom Palmer has been a forum through which key issues and challenges confronting ophthalmology have been debated, where new technology has been unveiled, and where ophthalmologists have come together to learn, discuss and teach the best care for patients. Bascom Palmer's tradition of excellence drives every aspect of its operation."

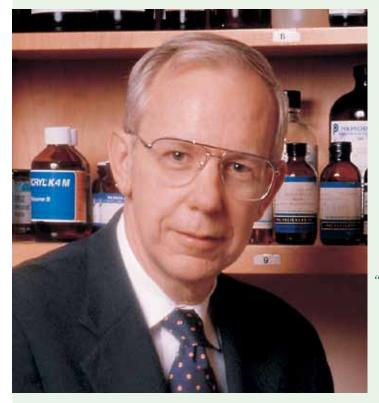
Eduardo C. Alfonso, M.D.

Kathleen and Stanley J. Glaser Chair in Ophthalmology



Douglas R. Anderson, M.D.

Douglas R. Anderson Chair in Ophthalmology



Since its founding and thanks to the insight and commitment of John T. Flynn, M.D., one of Bascom Palmer's earliest faculty members, Bascom Palmer Eye Institute has had a service dedicated solely to the unique ophthalmic needs of children. In January 2015, **HILDA CAPÓ, M.D.**, the medical director of the pediatric ophthalmology service at Bascom Palmer, was awarded the John T. Flynn Chair in Ophthalmology in honor of Flynn and his tireless advocacy of the vital role clear vision plays in the mental, social and physical development of children, and to support research in pediatric ophthalmology.

Capó, a professor of clinical ophthalmology with dual fellowship training, specializes in pediatric ophthalmology and adult strabismus. She is renowned for her clinical skills in the areas of pediatric neuro-ophthalmology and the use of adjustable sutures in adult strabismus surgery, particularly for patients with double vision and patients who have had previous surgery.

"I would not practice ophthalmology anywhere else. Bascom Palmer has tremendous resources, including the most advanced diagnostic and ancillary testing equipment available anywhere in the world. Our young patients and their parents get near-immediate answers." The clinical and laboratory research by Bascom Palmer's **DOUGLAS R. ANDERSON, M.D.**, has made significant contributions to glaucoma knowledge. The Douglas R. Anderson Chair in Ophthalmology was established in 1995 by patients and alumni to support glaucoma research.

Bascom Palmer's first glaucoma specialist, Anderson's research interest was to understand the mechanisms of glaucomatous damage to the optic nerve. Anderson's keen observations contributed to the art and science of visual field testing in the clinical management of glaucoma. He is a founding member and past president of the American Glaucoma Society, former president of the Association for Research in Vision and Ophthalmology, and recipient of the Mildred Weisenfeld Award for outstanding ophthalmic research.

"When I arrived at Bascom Palmer in 1969, Dr. Norton told me that my job would be simply to become the best academic ophthalmologist of which I was capable. He explained that his job was to provide the best environment within which that could happen."

Hida Capó, M.D. John T. Flynn Chair in Ophthalmology



William W. Culbertson, M.D.

Lou Higgins Chair in Ophthalmology



A recognized pioneer in vision correction surgery and expert in corneal disease, **WILLIAM W. CULBERTSON**, **M.D.**, is the Lou Higgins Chair in Ophthalmology, established to support cornea research. Culbertson is recognized as one of the world's most skilled refractive and cataract surgeons, with exceptional experience and knowledge of the field.

With more than 35 years of experience in corneal diseases and surgery, Culbertson has seen the capabilities of extending the use of lasers grow dramatically. Decades ago he participated in the first nationally organized study of refractive surgery and today, with an innovative team of ophthalmologists, has co-developed a femtosecond cataract laser that may be among the most significant advancements in cataract surgery in the last 50 years.

"My professional goal is to provide the best clinical care to patients while working to develop treatments and technologies that will make a substantial difference in the management of eye disease."

Janet L. Davis, M.D., M.A. *Leach Chair in Ophthalmology*

After completing her ophthalmology residency, **JANET L. DAVIS, M.D., M.A.**, followed an unusual career trajectory by completing two fellowships: the first in vitreoretinal surgery at Bascom Palmer; the second in ocular immunology at the National Eye Institute Laboratory of Immunology. She then returned to Bascom Palmer and its patient care facility – the Anne Bates Leach Eye Hospital. In January 2015, Davis was awarded the Leach Chair in Ophthalmology, the first chair funded at the University of Miami School of Medicine, created with a gift to support ophthalmic research from Anne Bates Leach, the hospital's namesake.

A medical and surgical retina specialist, Davis is a world-renowned expert in the field of uveitis. Her academic interests are infectious and inflammatory diseases of the eye, with an emphasis on diagnostic procedures and clinical management of uveitis, including the surgical management of uveitic complications.

"Bascom Palmer's uveitis center has grown significantly in the past few years, particularly in terms of research. We aspire to have the best uveitis training in the country."



Sander R, Dubovy, M.D. *Victor T. Curtin Chair in Ophthalmology*



"The tremendous amount of clinical and pathologic material at Bascom Palmer is essential to the expansion of our research efforts on a national and international level."

Ophthalmic pathology and the understanding of ophthalmic disease at the tissue level is integral to the proper education of training ophthalmologists. Victor T. Curtin, M.D., Bascom Palmer's second faculty member, established the Florida Lions Ocular Pathology Laboratory at Bascom Eye in 1962 and guided its growth for nearly 40 years. Today, it is directed by **SANDER R. DUBOVY, M.D.**, one of only a handful of physicians who is board-certified in ophthalmology and anatomic pathology. Dubovy is the holder of the Victor T. Curtin Chair in Ophthalmology, which was established with a major gift from the Lions of South Florida to support experimental ophthalmic pathology.

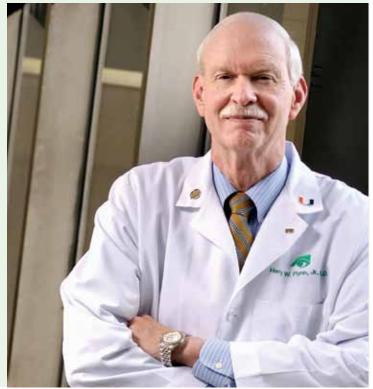
Dubovy's clinical practice involves both clinical ophthalmology and diagnostic ocular pathology. His practice is limited to medical retinal disease and includes age-related macular degeneration, diabetic retinopathy, retinal vascular disease and inherited retinal diseases.

"I am humbled and honored to hold the J. Donald M. Gass Chair in Ophthalmology. Dr. Gass set a standard of excellence against which all other ophthalmologists are measured. We are all students of Don Gass."

HARRY W. FLYNN, JR., M.D., is the holder of the J. Donald M. Gass Chair in Ophthalmology. Established to support research in retinal and macular diseases, the chair is named in honor of J. Donald M. Gass, M.D., who was named one of the 10 most influential ophthalmologists of the 20th century. During his 30-year tenure at Bascom Palmer, Gass recognized several hundred previously unidentified eye diseases and published the first major book on retinal and macular diseases.

An internationally known retina specialist, Flynn is an expert in the field of diabetic retinopathy. In 2014, the Retina Society recognized him as Guest of Honor for outstanding leadership and advancement of knowledge in the field of retina, mentorship of generations of retinal physicians and surgeons, and his consummate integrity. Flynn considers this honor to be the greatest of his professional career.

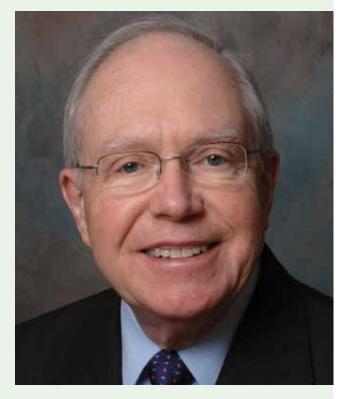
Harry W. Flynn, Jr., M.D. J. Donald M. Gass Chair in Ophthalmology



Bascom Palmer Eye Institute has built an enviable international reputation on the caliber and achievements of its exceptional faculty and alumni. **RICHARD K. FORSTER, M.D.**, exemplifies both. The eponymous chair was established in honor of Forster in 1993 by several multinational enterprises dedicated to international health and education to support research in corneal and external diseases.

Forster joined the faculty of Bascom Palmer in 1969 and has enjoyed a remarkable 46-year career at the Institute, including serving as interim chair and medical director from 1999-2001. Prior to his tenure as chair, he served as medical director of King Khaled Eye Specialist Hospital in Riyadh, Saudi Arabia. His clinical expertise is the development and refinement of the management of endophthalmitis with intraocular culture techniques, the implementation of intraocular antibiotics, and therapeutic vitrectomy. His clinical research concentrates on penetrating keratoplasty techniques for reducing astigmatism, myopia and anisometropia.

"I can only touch and provide care for a finite number of patients in my career, but if I can participate in the education and training of residents, fellows, students and the community – nationally and internationally – the number of patients who can benefit from care will increase exponentially." Richard K. Forster, M.D. Richard K. Forster Chair in Ophthalmology



Bascom Palmer's second chair, John G. Clarkson, M.D., is dean emeritus of the University of Miami Leonard M. Miller School of Medicine. An internationally recognized vitreo-retinal specialist, researcher and administrator, he currently serves as executive director of the American Board of Ophthalmology. The endowed chair established in his name honors Clarkson's academic leadership and supports medical education at Bascom Palmer. It is fitting that the inaugural holder of the John G. Clarkson Chair in Ophthalmology is **STEVEN J. GEDDE, M.D.**, Bascom Palmer's vice chairman of education and residency program director.

Gedde, a nationally and internationally respected leader in the field of glaucoma, is dedicated to teaching the next generation of ophthalmologists. Under his leadership, the residency program continues to attract the brightest young physicians who are entering the field of ophthalmology.

"I believe there is tremendous potential to positively impact patient care through education. Graduating residents and fellows can elevate the quality of patient care that is delivered in their local communities. As they in turn educate others, they participate in the exponential dissemination of knowledge."

Steven J. Gedde, M.D. John G. Clarkson Chair in Ophthalmology



J. William Harbour, M.D. *Mark J. Daily Chair in Ophthalmology*



"My expertise in taking care of patients with cancers inside their eye is complemented by other worldclass Bascom Palmer physicians who treat patients with tumors on other parts of the eye. This results in Bascom Palmer being the international destination for eye cancer care of unsurpassed quality."

With nearly two decades separating their training at Bascom Palmer Eye Institute, renowned ophthalmologists Mark J. Daily, M.D., and **J. WILLIAM HARBOUR, M.D.**, had not met before their shared vision for pioneering research and patient care brought them together at a ceremony at which Harbour was presented with the Mark J. Daily Chair in Ophthalmology. The chair supports retinal research.

A retinal surgeon and ocular oncologist, Harbour's genetic discoveries have transformed the diagnosis and treatment of uveal melanoma, retinoblastoma, ocular lymphoma and other intraocular tumors. He pioneered the use of gene expression profiling in uveal melanoma, and was the first to report the use of next-generation genomic sequencing techniques in this cancer. Harbour's work resulted in the discovery of the first and only metastasis suppressor gene (BAP1) to be identified in uveal melanoma. He also developed the first and only molecular prognostic test for ocular melanoma that is now the gold standard in the field.

"We are fortunate to be in an exciting era where novel diagnostic techniques and innovative therapies, including gene therapy and stem cell therapy, are being tested and will ultimately be implemented for previously untreatable conditions."

BYRON L. LAM, M.D., has been a productive clinical scientist for over 20 years. His broad background in neuro-ophthalmology and hereditary retinal degenerations has enabled him to collaborate with basic and clinical scientists resulting in many successful translational projects. In January 2015, Lam was awarded the Robert Z. and Nancy J. Greene Chair in Ophthalmology for the support of ophthalmic research.

Lam's early work on visual function tests led him to realize the importance of understanding disease mechanisms and testing of potential therapies of difficult-to-treat conditions. Lam's many neuro-ophthalmology interests include idiopathic intracranial hypertension, hereditary optic neuropathies, and anterior ischemic optic neuropathy. In addition to his clinical practice, Lam is medical director of neuro-ophthalmology and scientific co-director of the Adrienne Arsht Hope for Vision Retinal Degeneration Laboratory.

Byron L. Lam, M.D. Robert Z. and Nancy J. Greene Chair in Ophthalmology

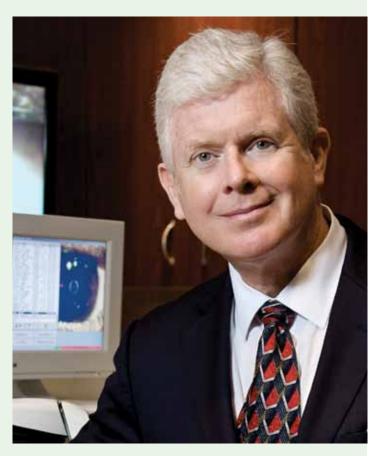


Terrence P. O'Brien, M.D. Charlotte Breyer Rodgers Chair in Ophthalmology

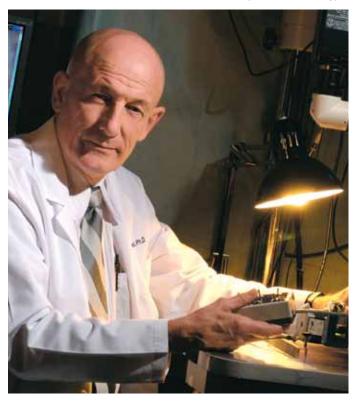
An internationally recognized expert in ocular infectious diseases, corneal, anterior segment and refractive surgery, **TERRENCE P. O'BRIEN, M.D.**, is the Charlotte Breyer Rodgers Chair in Ophthalmology. This chair, dedicated to ophthalmic research, was established through an endowment by Charlotte Breyer Rodgers of the famed Breyer Ice Cream Company.

A clinician, educator and scientific investigator, O'Brien has an active clinical and surgical practice in external diseases and cornea, and is director of the refractive surgery service at Bascom Palmer Eye Institute at Palm Beach Gardens. O'Brien is available for consultation on laser vision correction, corneal and external diseases, cataracts and intraocular lens.

"The resources generated by this endowment provide a vital source of income to ensure support for the sight-saving clinical and scientific research as we continue to advance ophthalmic knowledge."



Jean-Marie Parel, Ing.ETS-G, Ph.D. Henri and Flore Lesieur Chair in Ophthalmology



During his 45 years at Bascom Palmer Eye Institute, JEAN-MARIE PAREL, ING.ETS-G, PH.D., has dramatically improved patient care by developing novel technologies and treatments to help physicians and surgeons assist their patients. A premier biomedical engineer, research associate professor, and holder of the Henri and Flore Lesieur Chair in Ophthalmology, Parel has distinguished himself through unparalleled contributions to the field of ophthalmology.

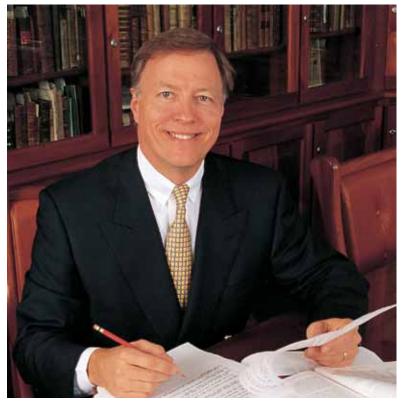
Parel founded Bascom Palmer's Ophthalmic Biophysics Center, a research and service laboratory located in the Evelyn F. and William L. McKnight Vision Research Center. In the early '70s, he developed a remarkable surgical instrument – the first vitreous infusion suction cutter (VISC). This revolutionary instrument allowed intraocular microsurgery while preventing eye collapse and changed the course of modern retinal surgery.

"Responding to huge demand for the vitrectomy instruments we designed, Bascom Palmer launched a global training program. We knew every patient could not come to us for surgery, so we trained the top ophthalmologists around the world so they could do the procedures in their own countries." While the evolution of medical science during the twentieth century provided opportunities for many inspired ophthalmic leaders, few have excelled to achieve the worldwide acclaim accorded Edward W.D. Norton, M.D., founding chair of Bascom Palmer Eye Institute. A man of unquestionable integrity, wisdom and energy dedicated to the preservation of vision, it is appropriate that the endowed chair to support ophthalmic research, named in his honor, be awarded to **RICHARD K. PARRISH II, M.D.**, a dedicated scientist, teacher and world-renowned glaucoma specialist.

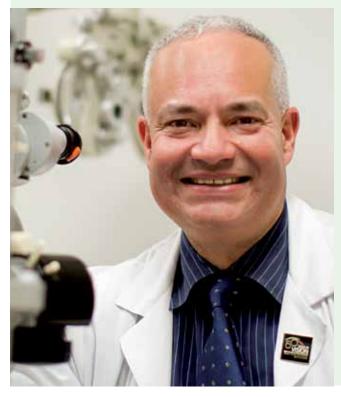
An alumnus of Bascom Palmer's glaucoma fellowship program, Parrish joined the faculty in 1982, and has served the University of Miami as professor of ophthalmology, residency program director and Bascom Palmer's third chairman. He is currently the associate dean for medical education and chairman of the graduate medical education committee.

"I stayed at Bascom Palmer not to be a teacher, but to remain a student for the rest of my life. A day does not pass that I learn far more from the residents, fellows and my patients than I teach them."

Richard K. Parrish II, M.D. Edward W.D. Norton Chair in Ophthalmology



Victor L. Perez, M.D. Walter G. Ross Chair in Ophthalmology



"The close link between our research and clinical care is the ability to quickly adapt and innovate. Bascom Palmer's Ocular Surface Center is able to offer patients individualized therapies that can make a big difference in their treatment outcomes and quality of life."

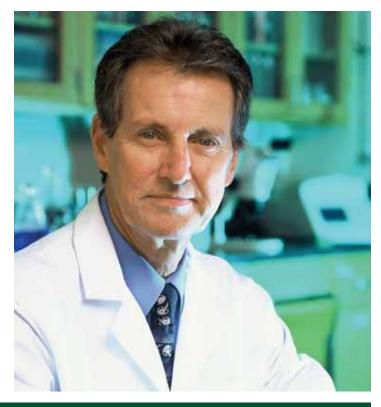
VICTOR L. PEREZ, M.D., professor of ophthalmology, microbiology and immunology, is the holder of the Walter G. Ross Chair in Ophthalmic Research. This endowed chair memorializes the generosity of Walter G. Ross, a decorated officer in the U.S. Army Corps of Engineers, respected diplomat and international entrepreneur. Support from the chair is used to advance the frontiers of medical science, primarily by translating research findings into clinical uses.

Perez was selected for this distinction based on his novel treatments for patients with severe ocular surface disorders, who are often told nothing more can be done for them. As director of Bascom Palmer's Ocular Surface Center, one of just six such centers in the United States, Perez is devoted to the diagnosis and treatment of patients with corneal scarring; severe dry eyes, including thermal and chemical burns; immunosuppression challenges; meibomian gland dysfunction; allergies; and Stevens-Johnson syndrome. The John S. and James L. Knight Foundation created a professorship in opthalmology with an emphasis on vision research and education. In January 2015, **VITTORIO PORCIATTI, D.SC.**, was awarded the position. Professor of ophthalmology, neuroscience and biomedical engineering, Porciatti is director and vice chair of research at Bascom Palmer.

Porciatti's studies published in major journals have shown that the pattern electroretinogram (PERG) was altered in diseases of the retinal ganglion cells (RGCs). The PERG technique is now widely used, and his current NIH-funded research on early detection of glaucoma uses it as its main tool. His research has shown that patients with suspicion of glaucoma who were followed over time showed that loss of RGC function anticipates loss of optic nerve tissue by eight years on average, providing a sizeable time window for preventive treatment.

"Using the tools of 21st century medicine – including genetics, cellular biology, molecular diagnostics and advanced imaging – Bascom Palmer researchers are poised to understand why the eye may become susceptible to disease and how biotechnologies may help to prevent these conditions."

Vittorio Porciatti, D.Sc. James L. Knight Professorship in Ophthalmology



William E. Smiddy, M.D.

M. Brenn Green Chair in Ophthalmology



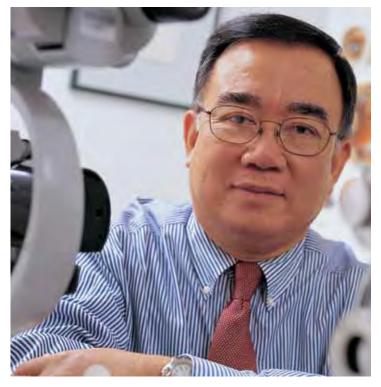
"I am gratified that patients around the world can benefit from my contribution to the development of vitrectomy for the treatment of macular holes. Once thought untreatable, macular holes are now one of the most successfully treatable retinal conditions."

WILLIAM E. SMIDDY, M.D., is an internationally recognized and respected vitreoretinal specialist. He is principally occupied with a busy practice that has an emphasis on surgical treatment of vitreoretinal diseases, and has made numerous contributions through his clinical research efforts. He is the holder of the M. Brenn Green Chair in Ophthalmology, which is awarded through the generosity of philanthropist M. Brenn Green to support research in diabetic eye disease.

Smiddy's field of specialty, the surgical treatment of retinal problems, includes conditions such as retinal detachments, complications of cataract surgery and diabetic retinopathy. His particular area of interest is surgical treatment of macular diseases, such as epiretinal membranes and macular holes. His heavy clinical duties allow him to conduct his research efforts at a clinical level. Through a generous donation from Nasser Ibrahim Al-Rashid, Ph.D., Bascom Palmer established the world's first interdisciplinary research center dedicated to eradicating optic nerve injuries and lethal orbital malignancies. Al-Rashid also endowed a chair in ophthalmic plastic, orbital surgery and oncology in honor of and gratitude for **DAVID T. TSE, M.D.**

Tse's clinical interests include the full spectrum of lacrimal, eyelid and orbital reconstructive surgeries due to disease or injury, as well as aesthetic and rejuvenative surgeries. His clinical research efforts center on innovative ways to treat extensive skin cancers and lethal orbital malignancies as well as translational research.

"Bascom Palmer is the incubator for the next generation of thought leaders in orbital surgery. Our research team is dedicated to investigate molecular underpinnings of a broad spectrum of orbital diseases in which effective therapy remains elusive, and to transform the culture of biomedical research in order to basten the discovery and implementation of new treatment and prevention strategies." David T. Tse, M.D. Dr. Nasser Ibrahim Al-Rashid Chair in Ophthalmology





"Bascom Palmer Eye Institute is committed to educate physicians, strengthen partnerships and provide the finest possible clinical care. The patient's needs always come first." — Edward W.D. Norton, M.D.

New Naples Eye Center Opens





From left, Andy Cummins, Hanna Cummins, Dr. Stephen Schwartz, Dr. Joseph Beauchamp, Jean Beauchamp, Audrey Lewis, Richard Lewis, Fran Gozon, Colleen Murphy, Paul Skapura, Helen McDonough, Gerald McDonough, Dr. Eduardo Alfonso, Dean Pascal Goldschmidt

In March, more than 250 friends of Bascom Palmer were counting the days until the Institute's newest eye center would open in Naples.



Dean Pascal Goldschmidt with UM Board Trustee Emeritus Franki Wolfson Wearing hard hats, guests walked through the construction site of the \$25 million, 20,000-square-foot, state-of-the-art eye care center, funded through Bascom Palmer's Ophthalmology Research Foundation and the generosity of the Naples community. Stephen G. Schwartz, M.D., M.B.A., medical director of Bascom Palmer Eye Institute at Naples, welcomed the guests to Bascom Palmer's new home. "When other people travel all over to find world-class medical care, you won't have to," he said. "Bascom Palmer is coming to you."

Ten years ago, 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. Begun primarily to diagnose and treat retinal and macular diseases, the practice has grown considerably.

The new center provides more than six times the current amount of clinical space for the treatment of virtually all eye diseases, including macular degeneration, glaucoma, cataracts and pediatric eye disorders. The additional space will allow Bascom Palmer to expand the number of clinical research trials offered to patients. On-site surgery will also be available in an ambulatory surgery center.

Located at the corner of Tamiami Trail and Cypress Woods

Drive, across the street from Park Shore Drive, four miles north of downtown Naples, the two-story eye center opened June 29th.



Dr. Eduardo Alfonso, Sheila Davis, Dean Pascal Goldschmidt



Groundbreaking Planned for New Bascom Palmer Eye Institute at Abu Dhabi

Patient Care and Surgical Center to Open in 2016

Bascom Palmer Eye Institute has announced plans for its first international eye center to open in Abu Dhabi, United Arab Emirates (UAE). Located in Mohammed Bin Zayed City, the 113,000-squarefoot facility will provide more than 40 eye examination rooms and an ambulatory surgery center. The eye center will contain clinical space dedicated to the treatment of retinal and macular diseases, glaucoma, corneal diseases, pediatric ophthalmology, laser vision correction and neuro-ophthalmology. It will also feature a video conferencing theater and auditorium for physician education.

At a cost of AED 200 million, (\$55 million), the Bascom Palmer project is being funded by His Excellency Dr. Abdulrahim Jaffar Al Zarouni and Mr. Suhail Jaffar Al Zarouni through their organization, SOZA Group, in partnership with August Medical.

At a ceremonial groundbreaking ceremony inaugurated by His Excellency Sheikh Nahyan bin Mubarak Al Nahyan, UAE's Minister of Culture, Youth, and Community Development, Eduardo C. Alfonso, M.D., Bascom Palmer's chairman, said, "We are looking forward to providing some of the world's leading ophthalmologists to serve the people of UAE and to bring our medical education program to the community."

Also attending the ceremony was Pascal J. Goldschmidt, M.D., senior vice president for medical affairs, Dean of the Miller School of Medicine, and CEO of UHealth, who said, "This marks a very special milestone for the University of Miami Miller School of Medicine a new chapter in our global outreach initiative. The collaboration between the Institute, SOZA Group and August Medical is the first time that our medical school will be permanently stationing full-time, academic physicians outside of the United States."



This spring, hundreds of Bascom Palmer supporters celebrated the 34th annual Evening of Vision Gala at The Mar-a-Lago Club in Palm Beach. Chaired by Alfonso and Raysa Fanjul, the gala celebrated the beauty of the eye. Lois Pope and Ari Rifkin were Honorary Chairpersons and Hermé de Wyman Miro served as International Honorary Chair.

"The support and dedication of the Fanjuls and the entire Palm Beach community has

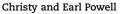
propelled Bascom Palmer to what it is today," said Eduardo C. Alfonso, M.D., Bascom Palmer's chairman. "Because of the generosity and commitment of our patients and friends, Bascom Palmer is the most advanced eye care center in the world."

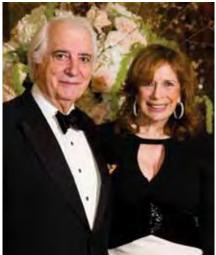
Mr. Fanjul gave heartfelt remarks about his strong belief in the mission of Bascom Palmer to prevent blindness, advance patient care and lead life-changing vision research. Proceeds from the gala are used to support patient care and research at Bascom Palmer.



Alfonso and Raysa Fanjul, Molly and Dr. Eduardo Alfonso







Bill and Nancy Rollnick



Tamar and Milton Maltz



Ari Rifkin, Dr. Robert Mackler, Lois Pope, Toni Holt Kramer and Robert Kramer



Veronica Atkins and Hermé

De Wyman Miro



Marietta and Dale McNulty

Iris Apfel Defines Style

"Attitude, Attitude, Attitude... If you have attitude, you have style," affirmed legendary style icon Iris Apfel at Bascom Palmer's gala kickoff luncheon. Apfel spoke about style, fashion, accessories and her signature oversize glasses during an interview with Patricia Alfonso Tortolani, beauty director-atlarge for Allure magazine and daughter of Bascom Palmer's chairman.

Apfel's love of unique eyeglasses began as a child when she purchased her first pair at a New York flea market. Flea markets continue to be her favorite shopping sites and many of her distinctive accessories have been amassed from travels around the world. Known for her inimitable style, Iris Apfel has designed jewelry and accessories, including a line of eyeglasses for eyebobs, currently available in Bascom Palmer's Palm Beach Gardens and Naples optical shops. When asked about her favorite pair of eyeglasses, Apfel stated, "More important than the frames are your eyes – healthy eyes are beautiful eyes."

Apfel and her husband, Carl, were named the inaugural Legacy Chairs of the 2015 Gala for their decades-long support of Bascom Palmer. The Legacy Chair honors people who have included Bascom Palmer in their estate plans.



Patricia Alfonso Tortolani with Iris Apfel

Awards and Honors

EDUARDO C. ALFONSO, M.D., will be installed as president of the Pan American Association of Ophthalmology (PAAO) this August at its 31st Congress in Bogotá, Columbia. With members in more than 35 countries in the Western Hemisphere, the PAAO's mission is to provide continuing education, prevent blindness and promote scientific and cultural exchange among ophthalmologists.



JOHN G. CLARKSON, M.D., received the Lucien Howe Medal for his distinguished service in ophthalmology at the May meeting of the American Ophthalmological Society (AOS). AOS Executive Director Hans E. Grossniklaus, M.D., M.B.A., summed up Clarkson's substantial contributions to ophthalmology, saying, "The recipient of the Howe Medal exemplifies excellence in service to ophthalmology in areas of research, teaching and patient care. Dr. Clarkson's career has been outstanding in all areas." Clarkson was Bascom Palmer's second chair, dean of the University of Miami Leonard M. Miller School of Medicine, and currently serves as the executive director of the American Board of Ophthalmology.

VICTOR T. CURTIN HONORED

Bascom Palmer Eye Institute alumni, faculty and staff honored VICTOR T. CURTIN, M.D., by establishing the Dr. Victor T. Curtin Endowed Speaker Series in recognition of Curtin's 50 years of dedication to the Institute. In 1959, DR. EDWARD NORTON, founding chairman of Bascom Palmer, recruited Curtin to join him in at the University of Miami School of Medicine. In just three years, the department of ophthalmology was launched, the first building was completed, and the department was named the Bascom Palmer Eye Institute.

During his 49-year tenure, while maintaining an active clinical practice with an emphasis on retinal diseases and surgery, Curtin founded the Florida's



Standing: Dr. Eduardo Alfonso, Dr. Victor Curtin, Dean Pascal Goldschmidt Seated: Dr. Sander Dubovy at the ceremony where he was awarded the Victor T. Curtin Chair in Ophthalmology

Lion Eye Bank, developed the residency training program, taught thousands of medical students, and served as devoted teacher and trusted mentor. More than 700 ophthalmology residents and fellows have had the privilege of training with Curtin at Bascom Palmer. Curtin became professor emeritus in 1998. In addition to the named speaker series, Curtin also held the Victor T. Curtin Chair in Ophthalmology, which continues to support innovative research in experimental ocular pathology. The Victor T. Curtin Chair in Ophthalmology was recently presented to SANDER DUBOVY, M.D., professor of ophthalmology and pathology. Dr. Dubovy is just the second holder of the chair, which was established in 1986 through funding from the Florida Lions Eye Bank.



Congratulations to RICHARD K. LEE, M.D., PH.D., for his recent induction into the Iron Arrow Honor Society. Iron

Arrow, founded in 1926 in conjunction with the University of Miami's opening, is the highest honor attained at the University. Based on Seminole Indian tradition, Iron Arrow recognizes those in the University of Miami community who exemplify five key qualities: love of alma mater, character, leadership, scholarship and humility. Lee, a vitreoretinal specialist, and AUDREY KO, M.D., were recently selected for the Alpha Omega Alpha Honor Medical Society (AOA). Membership into this national honor society is one of the highest honors a medical student, resident, scientist or physician can attain. Ko, a third-year resident was recognized for her extensive volunteerism at community health fairs, service to the underserved, and teaching and mentoring of medical students.

ARVO NEWS: Kudos to the Bascom



Palmer faculty and staff members who collaborated on more than 117 posters and presented 16 papers or minisymposiums at

the 2015 Association for Research in Vision and Ophthalmology's (ARVO) annual meeting confirming that Bascom Palmer is an international leader in vision research. Congratulations to J. WILLIAM HARBOUR, M.D., for being named a 2015 ARVO Silver Fellow.

PROFILES IN PHILANTHROPY

Bascom Palmer's success is often focused on the achievements of our physicians and scientists. However, these accomplishments would not be possible without the help of our donors who support the Institute's sight-saving mission. We honor and thank our many supporters for their generous commitment and philanthropy.

The Bascom Palmer Society

Honoring the Institute's most generous benefactors whose gifts exceed \$1 million, the Bascom Palmer Society was created in memory of the Institute's namesake, Bascom Headon Palmer, M.D., an ophthalmologist who pioneered eye care in Miami.

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Standing: Dr. Eduardo Alfonso, Norman Braman; seated: Dr. Steven Gedde, Dr. John Clarkson

An exceptional endowment from the Braman Family Foundation provided the lead gift to establish the John G. Clarkson Endowed Chair in Medical Education to support medical education at Bascom Palmer. "Irma and I are dedicated to training tomorrow's medical researchers as they seek new approaches and strategies for combating disease," said Norman Braman. "Bascom Palmer has long embodied excellence, and we are privileged to honor John Clarkson for his remarkable contributions to ophthalmology. In addition to the impact on medical education, the John Clarkson name on this endowed chair will be forever identified with his honesty, integrity, concern for the community and visionary thinking." Steven J. Gedde, M.D., is the inaugural holder of the chair which was also funded by the estate of Amy and Shlomo Yeminy. *(see related story, page 36)*

The Norton Society

Members of the Norton Society have generously supported Bascom Palmer with gifts totaling \$500,000 – \$999,999. This society honors the vision and leadership of Edward W.D. Norton, M.D., the Institute's founding chairman.

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Dr. Janet Davis and Ari Rifkin

Ari Rifkin first became acquainted with Bascom Palmer Eye Institute during the time her husband, Leonard, was a patient. Under the compassionate and excellent care of vitreoretinal specialist Janet L. Davis, M.D., M.A., Leonard's vision improved from 20/400, which is legally blind, to 20/50, allowing him to drive his golf cart and enjoy the simple pleasures of life.

After Leonard's passing in 2008, Ari served as co-chair of Bascom Palmer's Evening of Vision Gala in his loving memory. Ari assumed this leadership role as a gesture of gratitude for the wonderful care Leonard received at Bascom Palmer. Over the past seven years, Ari has also graciously hosted numerous other events for Bascom Palmer, including the Palm Beach Medical Forum and 2014 Evening of Vision Gala.

Throughout their frequent visits to Bascom Palmer, Ari and Leonard developed a deep respect and interest in Davis' research in retinal disease, especially those associated with inflammatory conditions such as uveitis. Demonstrating a commitment to Bascom Palmer and Davis, in 2009, Ari made a multi-year pledge to support retinal research. "I am extremely grateful not only for Ari and Leonard Rifkin's friendship, but also for their generosity," said Davis. "Their investment in Bascom Palmer has advanced our research in understanding the role of inflammation in retinal and macular diseases and will ultimately result in new treatment options."

The Luminary Society

This society recognizes individuals who are beacons for progress in vision research, clinical care and education. Generous donors have contributed gifts totaling \$100,000 - \$499,999.

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This society honors donors who have supported Bascom Palmer's mission with gifts totaling \$50,000 – \$99,999 that enable the Institute's physicians and researchers to combat blinding eye disease.

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Giving the Hope of Sight

There are a broad range of philanthropic giving societies available at Bascom Palmer. Please contact the development office at 305-326-6190 for benefits associated with giving societies or for additional information.

Thank you!

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Jenny Cyker strongly believes that eyesight is the most precious of one's faculties. Her dear mother suffered eyesight loss many years ago in the family's homeland of Cairo, Egypt. Even though she was under the care of a welltrained ophthalmologist in Cairo, Jenny's mother still struggled with the loss of her vision.

Jenny, an active philanthropist who resides in Palm Beach, had always wished to support ocular

research because of her mother's history with eye disease. When she became a patient of Terrence O'Brien, M.D., and learned more about his research interests and studies, she felt compelled to make a gift. Jenny's generous gift to Bascom Palmer Eye Institute will support O'Brien's work in the area of corneal research therapies.

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Members of the Friend Society support Bascom Palmer's mission to ease the burden of eye disease in adults and children. Friends have donated \$5,000 - \$9,999.

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Society of One Thousand

This society recognizes donors who invest in healthy vision by helping Bascom Palmer realize an extensive range of sight-saving programs. Donors whose annual gifts of \$1,000-\$4,999 were received between January 1, 2013 and December 31, 2014 are listed below.

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EYES AHEAD FOR CHILDREN

Before he was 13, Justin Rothberg already had two surgeries for strabismus, a visual defect in which the eyes are misaligned. During many visits to see pediatric ophthalmologist Craig A. McKeown, M.D., Justin became aware of children with this condition whose families were unable to pay for the corrective treatment.



Earlier this year, as Justin prepared for his Bar Mitzvah, he looked to engage in a meaningful community service project and established the Eyes Ahead Fund at Bascom Palmer. He began to raise awareness and funds to support underserved children requiring strabismus surgery. He engaged his schoolmates, friends and family and even asked his Bar Mitzvah guests to donate to the Eyes Ahead Fund.

Mazel Tov Justin! All eyes are on Justin and the important work he is doing for children in need.

Dr. Frank Metzger Mr. Jerome W. Moff Mr. & Mrs. Robert W. Moffatt Dr. Jeffrey K. Moore Naples Florida Weekly **NBT Enterprises** Nidek, Incorporated. Mr. Michael W. Oliveri & Mrs. Patricia A. McConnell Dr. & Mrs. John C. Olson Ms. Eleanor Pashelinsky **Philips Electronics** Mr. James E. Niederhofer Mr. Frank Pinto Mr. & Mrs. Roy K. Plum Raymond James & Associates, Inc. Mr. & Mrs. Jeffrey J. Reisner Mrs. Esta B. Ress Dr. Preston P. Richmond Mr. Andres Rivero Mr. & Mrs. Ennio D. Rocchini Dr. Robert H. Rosa Mr. & Mrs. Walter Ross Justin Rothberg Col. Robert W. Rust Mr. & Mrs. Don A. Salyer Mrs. Enery Samlut Ms. Sharon Saraniti The Scharlin Family Foundation Dr. & Mrs. Zbigniew Scheller Mr. & Mrs. Donald Scott

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This society recognizes those individuals who ensure Bascom Palmer Eye Institute's legacy by making the Institute a beneficiary of their estate or financial plans. Please let us know if you have included Bascom Palmer in your estate plans so we may recognize your investment in our future.

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PLANNED GIFTS PROVIDE INVALUABLE BENEFITS

Bascom Palmer's worldwide leadership in medical education is perpetuated by the philanthropy of countless friends and supporters as evidenced when Steven J. Gedde, M.D., was formally presented with the Dr. John G. Clarkson Endowed Chair in Medical Education. Gedde is the inaugural holder of the chair, which was created through a generous gift from the estate of Amy & Shlomo Yeminy and the philanthropic leadership of the Braman Family Foundation to support medical education.

"After taking care of Amy and Shlomo Yeminy for many years, I had no idea they had designated Bascom Palmer in their wills. They were dear patients and completely devoted to one another," said Clarkson. With assistance from M. Judith D. Post, M.D., of the University of Miami Miller School of Medicine, a Yeminy family friend and representative, the Yeminy's fulfilled their wish to benefit medical education, research and patient care at the Institute that was so very important to them."

If you have named Bascom Palmer Eye Institute as a beneficiary in your will or other planned giving instrument, please let us know so we may thank you and give you the recognition you deserve. The development office at Bascom Palmer can be reached at 305-326-6190. We thank you for your consideration and generosity.



Bascom Palmer's residents, fellows and University leadership join Dr. John Clarkson (seated left) and Dr. Steven Gedde (seated right) at the ceremony naming Gedde the inaugural holder of the Dr. John G. Clarkson Endowed Chair in Medical Education.

M. Kaufman

Events

In an ongoing effort to provide the latest medical and research information, Bascom Palmer's faculty presents updates to the community on eye disease, current treatments and vision research.

FORT LAUDERDALE

Fort Lauderdale friends and donors gathered in Fort Lauderdale at the Josephine S. Leiser Opera Center to learn about the newest advancements in cataract surgery and laser vision correction from Kendall E. Donaldson, M.D., M.S.; ocular surface diseases from Victor L. Perez, M.D.; and uveitis, inflammation and infections of the eye from Janet L. Davis, M.D., M.A. Special thanks to the Josephine S. Leiser Foundation for their event sponsorship and to Peter Burgess and Glenn Friedt who served as hosts.



Peter Burgess, Mike Zamborous and Glenn Friedt



Dr. Victor Perez and Judith Bloom



Dr. Eduardo Alfonso, Jean-Faye Friedt and Theodore Friedt



Dr. Kendall Donaldson and Mimi Bauer



Fruema and Elliot Klorfein



Barney and Monnie Donnelley



Malcolm & Sandra Berman

PALM BEACH

Mar-a-Lago was the setting for the Palm Beach Medical Forum & Luncheon where guests learned of new initiatives in treatment and research in macular degeneration from Jorge Fortun, M.D.; the future of glaucoma therapy from David S. Greenfield, M.D.; and advances in cataract surgery and laser vision correction from Terrence P. O'Brien, M.D. Long-time friend and supporter of Bascom Palmer, Fruema Klorfein, served as the event chair.

SAVE THE DATES

PALM BEACH MEDICAL FORUM & LUNCHEON

January 14, 2016 Mar-a-Lago, Palm Beach

PALM BEACH GALA

March 5, 2016 Mar-a-Lago, Palm Beach Marietta and Dale McNulty, chairs

For information about Bascom Palmer events, please contact Kara Donvito, director of major gifts at 561-355-8642 or email k.donvito@med.miami.edu.



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