### **UCI Health**

C Gavin Herbert Eye Institute

# SHINE the LIGHT

### FALL 2018

### IN THIS ISSUE

- 1. Renowned team joins GHEI
- 2. How to participate in clinical trials
- 3. Letter from the chair
- 4. Patient spotlight
- 4. Welcome new faculty
- 5. Medical mission
- Donor profile
  GHEI five year anniversary

### **RESEARCH UPDATE**

## Renowned team joins GHEI to combat blindness

The UCI School of Medicine welcomed Krzysztof Palczewski, PhD, to the faculty of the Department of Ophthalmology and the Gavin Herbert Eye Institute (GHEI), effective September 2018. An internationally renowned chemist, pharmacologist and vision scientist, Palczewski has made critical contributions to the understanding of the molecular basis of age-related macular degeneration and inherited retinal degeneration, illuminating the path toward the development of new vision therapies.

Palczewski joins UCI from Case Western Reserve University, where he served as the John H. Hord Professor, Distinguished University Professor and chair of the Department of Pharmacology. He brings with him a collaborative team of noted vision researchers, who will join the Department of Ophthalmology and the Department of Physiology and Biophysics. This team will maximize opportunities to translate insights from basic science investigations into clinical therapeutics. They will also form the initial core of a planned Center for Translational Vision Research at GHEI.



#### continued from page 1

"We are very excited to have Dr. Palczewski and his team here at UCI," said Baruch D. Kuppermann, MD, PhD, director of the Gavin Herbert Eye Institute. "This research group has been studying the pharmacology of vision for more than 30 years. Their work has made a tremendous impact on our ongoing efforts to restore vision in human patients suffering from retinitis pigmentosa and other congenital mutations that result in early stage blindness."

Palczewski is best known for his discovery of the structure and the folding and binding properties of rhodopsin, a light-sensitive receptor protein. This discovery profoundly increased the understanding of the molecular basis of vision and the structure of photoreceptor cells in the retina. It also contributed to the ability to generate new molecular therapeutics for age-related macular degeneration and other retinopathies.

"Dr. Palczewski's presence at UCI School of Medicine and his work at GHEI hold great promise for the global community, not to mention the fact that his joining our faculty speaks volumes for the reputation of our institution," said Michael J. Stamos, MD, dean of the medical school. "With the addition of this team, UCI is positioned to lead cutting-edge research surrounding common blinding diseases and deliver innovative therapies for the millions of people robbed of their sight or those afflicted with progressive visual diseases resulting in blindness."

Palczewski's many contributions to science have been published in respected peer-reviewed scientific journals including Nature, Science, Neuron, Proceedings of the National Academy of Sciences (PNAS), Journal of Biochemistry and Journal of Clinical Investigation. In addition to his research, Palczewski holds 22 patents and is the recipient of several prestigious awards, including the 2015 Bressler Award in Vision Science and the inaugural 2014 Beckman-Argyros Award in Vision Research. He is the only scientist to win both the Cogan Award for the most promising young vision scientist and the Friedenwald Award for continuously outstanding ophthalmology research, which he received in 1996 and 2014, respectively, from the Association for Research in Vision and Ophthalmology. His work has been cited more than 42,000 times.

Today, the global impact of blindness and visual impairment is enormous, especially in aging populations. The major causes are cataracts, age-related macular degeneration and glaucoma. The increased incidence and prevalence of type 2 diabetes also frequently results in blindness due to retinopathy.

### **CLINICAL HIGHLIGHT**

# How to participate in GHEI clinical trials

At the intersection of ophthalmic research and top-notch treatment is a group of very important people: patients who sign up for clinical trials. Sometimes, they reap the benefit of extraordinary new procedures or medications long before those treatments are available to the public. Sometimes not. But even then, they are important participants in advancing medical knowledge.

Rosie Magallon keeps track of it all. As senior clinical research coordinator for GHEI, Magallon works to ensure that clinical trials find enough participants, and that these trials are adhering to the many requirements of the U.S. Food and Drug Administration, as well as to UCI's internal review board.

GHEI is now in the midst of additional phases of patient trials using jCell, an investigational treatment composed of retinal progenitor cells, to treat retinitis pigmentosa, an incurable condition in which the person's field of vision narrows to a mere pinhole because of the loss of retina cells. Patients also can lose color vision. The progenitor cells are obtained from fetal tissue and expanded using standard manufacturing methods. Early trials have yielded exciting results, bringing back some of the subjects' lost vision.

Clinical trials will be starting soon to test new medications for wet macular degeneration, as well as a new lens for cataract surgery.

Interested in participating? For more information about our clinical trials, please visit https://bit.ly/GHEIClinicalTrials. Contact Rosie at rmagallo@uci.edu or call 949-824-8297

### **Message from Baruch D. Kuppermann, MD, PhD** Chair, Department of Ophthalmology Director, Gavin Herbert Eye Institute

### What a difference five years can make

In September 2013, Gavin Herbert Eye Institute opened its doors to the community. Just five years later, Orange County's only academic vision center is proud to shine a light on our accomplishments.

We are inspired by the enthusiastic support the institute has received from donors, patients and referring physicians — and we are grateful for your support in helping us achieve our milestones.

Our clinical space is already bursting at the seams — a testament to the growing number of people who are benefiting from the institute's world-class vision care. We are looking for ways to add exam and operating rooms to better serve you.

Our researchers are at various stages with promising studies for preserving and restoring sight. Potential new therapies for such conditions as retinitis pigmentosa and ocular herpes are about to begin or are in human clinical trials.

We also have attracted many talented professionals to GHEI to participate in defining the future of eye health — doubling our faculty and enriching our expertise.

Most recently, the UCI School of Medicine announced that a group of high-impact scientists, led by worldrenowned ocular pharmacologist Krzysztof Palczewski, PhD, will join GHEI, ushering in a major new area of bench-to-bedside research. Palczewski, an internationally renowned chemist, pharmacologist and vision scientist, has made critical contributions to the understanding of the molecular basis of age-related macular degeneration and inherited retinal degeneration.

Palczewski and his team bring us novel insights that promise to be a springboard for exciting developments in vision therapies. This team will be the first, though not the last to join our planned Center for Translational Vision Research, which will undertake game-changing research that will lead to enhanced patient care.

These first five years have positioned GHEI for a bright and impactful future, indeed. We look forward to having you with us on what promises to be an eventful journey.



Kourch le prinan

Baruch D. Kuppermann, MD, PhD Chair, Department of Ophthalmology Director, Gavin Herbert Eye Institute

### Faculty members

#### Cataracts, Cornea, External Disease and Refractive Surgery

Marjan Farid, MD Vice Chair, Ophthalmology Faculty Sumit (Sam) Garg, MD Vice Chair, Clinical Ophthalmology Sanjay Kedhar, MD Matthew Wade, MD

#### **Cataracts and Glaucoma**

Anand Bhatt, MD Richard Hill, MD Ken Y. Lin, MD, PhD Sameh Mosaed, MD

**Comprehensive Ophthalmology** Kavita K. Rao, MD

#### **Low Vision** Rebecca L. Kammer, OD

**Neuro-ophthalmology** Chantal J. Boisvert, MD Robert Wade Crow, MD

**Oculoplastics** Jeremiah Tao, MD

#### **Ophthalmic Pathology** Donald S. Minckler, MD

**Optometry** Joseph Bui, OD Catherine Huang, MD Timothy Scott Liegler, OD Kailey A. Marshall, OD Linda Shi, OD Poonam Varsani, OD

#### **Pediatric Ophthalmology**

Chantal J. Boisvert, MD Charlotte Gore, MD Robert W. Lingua, MD Jennifer L. Simpson, MD

#### **Retina and Vitreous**

Andrew Browne, MD, PhD Baruch D. Kuppermann, MD, PhD *Chair, Department of Ophthalmology* Stephanie Y. Lu, MD Mitul C. Mehta, MD Mohammad Riazi, MD **Uveitis** Sanjay Kedhar, MD

#### Research

Andrew Browne, MD, PhD Lbachir BenMohamed, PhD James V. Jester, PhD Tibor Juhasz, PhD M. Cristina Kenney, MD, PhD Timothy Kern, PhD Henry J. Klassen, MD, PhD Baruch D. Kuppermann, MD, PhD Anthony B. Nesburn, MD *Vice Chair, Research* Eric Pearlman, PhD Jing Yang, PhD

### Back on the golf course after cataract surgery

Greg Hirsch's cataracts had worsened to the point where they were seriously interfering with his life. Driving was an issue and he had trouble seeing the golf ball when he engaged in his beloved sport.

Hirsch, a retired resident of Newport Beach, put off surgery as long as he could. He had a history of eye problems that included retinal detachment and nearsightedness, which creates extra challenges and risks for cataract surgery.

When it could be put off no longer, Hirsch consulted with Dr. Sumit (Sam) Garg, a well-known cataract and cornea specialist at GHEI. Garg had been highly recommended to him by many people and had extensive experience with laser-assisted cataract surgery, Hirsh noted. The procedure took place last spring. Hirsch said his retina specialist recently assured him that there was no damage to that portion of his eyes.

Recovery was easy, Hirsch said — a few weeks of eyedrops. The change in his vision has been extraordinary.

"It was mind boggling," he said. "The first few hours after the surgery when I could see really well without glasses, it was a miracle."

He uses glasses for distance but can read without them.

"I can definitely see my golf ball now," he added.



### Welcome new faculty - Ken Y. Lin, MD, PhD



**Ken Lin, MD, PhD** Assistant Clinical Professor, Glaucoma and Cataract Surgery

Ken Y. Lin, MD, PhD, is a board-certified cataract and glaucoma surgeon. He graduated with honors from Stanford University. After obtaining his medical and postgraduate degrees in biophysics from Harvard Medical School and Massachusetts Institute of Technology (MIT), Lin completed his residency and glaucoma fellowship at UCI, where he served as chief resident.

Since 2012, Lin has been actively involved in educating young ophthalmologists. He served on the Young Eye

Surgeon clinical committee of the American Society of Cataract and Refractive Surgery (ASCRS), taught cataract surgery courses and served as a panelist in many ASCRS meetings. In addition to teaching residents and fellows, Lin also mentors UCI undergraduate and medical students.

Lin's research focuses on using endoscopic laser imaging and artificial intelligence to improve patient outcomes after glaucoma surgery. He has authored numerous publications and book chapters, and he holds multiple patents. His honors include the ASCRS Research Award, the Radiological Society of North America Research Award and the Young Investigator Award from the Society of Vascular Medicine and Biology. He was also recently featured in the digital publication *MillenialEYE* as "One to Watch."

### **MEDICAL MISSION**



### Teaching cornea transplant surgery in India

Dr. Marjan Farid found something especially satisfying about her medical mission to India. Usually, a specialist in cornea transplant and cataracts would be performing surgeries and restoring sight to patients. Farid was doing that and more: She was training some of the nation's ophthalmologists to do corneal transplants themselves.

Eight doctors from New Delhi, and six more from around the nation spent an intensive week of training with Farid last October, with the appropriate follow-up to fully establish their new skills.

It used to be, Farid said, that finding enough donor corneas to transplant was the main problem. "There was no culture of tissue donation in India," she said. Because of work by such groups as the eye bank SightLife, corneas are much more readily available. The problem now is a lack of doctors who are able to do the surgery and follow-up.

SightLife, which has done extensive work to eliminate corneal blindness in India, sponsored the mission that Farid joined.

"The thing that's very meaningful for me is that by training these corneal transplant surgeons, I know the work I did has been expanded to more and more patients," said Farid, director of the cornea and cataract service at GHEI and a SightLife board member. The training is hard. "It's not only about learning this highlevel skill, but also about appropriate patient preparation and follow-up over many years. It's not like cataract surgery where you can be in and out." In fact, she wasn't sure one of the trainee doctors was going to make it through the course.

"He came in very rough," she said. "It takes a lot of suturing skills to do this. By the end of the course, he was a changed surgeon in terms of his confidence level and his ability. It was a very steep learning curve and he was able to get far within a week."

The doctor returned to his eye institute, ordered the equipment he needed and lined up patients in need of treatment. "He's been doing great. My connection with these surgeons continues remotely as they email and text me questions and let me know of their progress virtually."

The need is high. There are millions of people with corneal blindness in India.

"The biggest reason is corneal infection and scarring," Farid said. A scratch or infection that might be easily treated with antibacterial drops goes unaddressed, leading to the scarring. In people who work out in the agricultural fields, bacterial and fungal infections are common. Ocular herpes is another problem. Many young people already have so much corneal damage that a transplant is necessary for functional vision.

"When you give a cornea to a blind person who's young, you're really improving their future and their family's future," Farid said. "They can go to school. They can go to work."

### **DONOR PROFILE**

### Steinert patient gives back to GHEI



Helen Shaham had always had extremely poor vision. Her attempts to have it corrected with laser surgery were turned down by doctor after doctor. Then in 2000, she found Dr. Roger Steinert, a pioneer in laser eye surgery in Boston and later, founding director of GHEI.

"He had the expertise to work on my cornea," Shaham said. "He told me that my cornea was very skinny-the one thing I have on my body that is skinny!" she joked. But being nervous about the procedure, she only gave him permission to fix one eye. It took minutes. When she sat up, she could see her husband Jacob through the window, waiting. "I laid back down and said, 'OK, you can do the other eye now.""

That evening in their hotel, she remarked on a pretty lamp. "You can see the lamp?" her husband asked in amazement. Then he told Shaham something he'd kept to himself-her mother died that day. Shaham said it was as though her mother, who had tried desperately to find help for her daughter's eye problems, felt she could finally let go.

After Steinert moved to Orange County, Shaham would fly cross-country from Florida for her eye care and she brought others to him as well. After Steinert's death in 2017, she began seeing Dr. Sumit (Sam) Garg.

Helen and Jacob Shaham were among the first donors to GHEI. "I want this place to grow and prosper," she said.

### Thank you to our donors

### Gifts of \$25,000 and above received since July 1, 2017, to the Gavin Herbert Eye Institute general fund:

Carol and Budge Collins Josephine Herbert Gleis Foundation

Gregory L. Hirsch Helen and Jacob Shaham Charitable Foundation

### Gifts of \$10,000 and above to the proposed Roger F. Steinert, MD, Endowed Chair in Ophthalmology:

Allergan Foundation Anne Brownstein J. Stuart Cumming, MD Josephine Herbert Gleis Ninetta and Gavin Herbert M. Christina Kenney, MD, PhD and Anthony B. Nesburn, MD Marsha Link, PhD and Bill Link, PhD Kelly and James Mazzo Martha and James Newkirk Molly and David E.I. Pyott Joyce and Scott Whitcup, MD

### Gifts of \$25,000 and above received since July 1, 2017 for research:

Access Business Group Intl.	Discovery Eye Foundation
Allergan Foundation	David H. Edington
ARVO	Josephine Herbert Gleis
Carl Zeiss Meditec Inc.	Foundation
Edith and Roy Carver	Ninetta and Gavin Herbert
anet and John Cauffman	Geneva M. Matlock, MD
CorneaGen	Research to Prevent Blindness
Cystinosis Foundation of	Retina Research Foundation
New Jersey	Polly and Mike Smith

Legacy gifts of \$100,000 and above since July 1, 2017: Yolanda and Dennis De La Paz

Geneva M. Matlock, MD

### Gifts of \$100,000 and above to Champions for Discovery Center for Eye Research:

Ninetta and Gavin Herbert M. Christina Kenney, MD, PhD, and Anthony B. Nesburn, MD Jantana and Baruch Kuppermann, MD, PhD

Kelly and James Mazzo Katy and Jack Schoellerman

### 20/20 Society received since July 2017 | Friends in Vision Gifts of \$2,500 and above:

Anonymous Susan A. Finney Romila and Sumit Garg, MD Arliss A. Hoskins Cristina M. Kenney, MD, PhD, and Anthony B. Nesburn, MD

The Kuppermann Family Nancy and Larry A. Pasquali, MD Cheryl and Richard Ruszat Katy and Jack Schoellerman April Steinert

### *Pediatric vision program gifts of \$10,000 and above:*

Anonymous Children and Families Commission of Orange County J&JVision

The Nicholas Endowment Lon V. Smith Foundation Sandy and David Stone

To make a donation toward the Roger F. Steinert Endowed Chair, contact Janice Briggs, senior executive director of development, at 949-824-0091 or jbriggs@uci.edu.

### Celebrating five years at GHEI

Gavin Herbert Eye Institute opened its doors in 2013 as Orange County's only academic vision center, providing access to a broader range of eye care services, from leading-edge clinical trials to sight-saving treatments and therapies for virtually any eye disorder.



# **UCI Health**

850 Health Sciences Road Irvine, CA 92697

### VISIT THE OPTICAL SHOP

For your convenience, we have extended our hours: Monday –Thursday 7:30 a.m.–6 p.m. Friday 7:30 a.m.–5 p.m. Saturday: 7 a.m.–3 p.m. Call 949-824-7690 to schedule your appointment now!

Proceeds from our optical shop go to fund sight-saving research and to help students diagnosed with keratoconus pay for specialty lenses not covered by insurance.



UCI Health Gavin Herbert Eye Institute

NONPROFIT ORG U.S. POSTAGE **PAID** Santa Ana, CA Permit No. 1106