

# SHINE the LIGHT

## IN THIS ISSUE

Story	Pg
High support for low vision	1
Message from the chair	3
UCI Health welcomes new low-vision optometrist	4
Looking on the bright side	5
Bringing visibility to keratoconus	6
Faculty	7
Thank you to our donors	7

## RESEARCH UPDATE

### High support for low vision

When eye diseases such as macular degeneration, retinitis pigmentosa and glaucoma impair vision so much that it impacts daily life, patients often feel a sense of loss and despair. At the Gavin Herbert Eye Institute, our Low Vision Rehabilitation Program experts strive to restore hope and help patients get back to what they love to do.

Southern California's only low-vision rehabilitation service at an academic medical center, our program is led by two experienced specialists, optometrist Karen Lin, OD, and occupational therapist Nilima Tanna.

"Our goal is to help the patient maintain or achieve independence and be able to participate in meaningful activities," says Tanna. "We focus on maximizing a person's ability to use their remaining vision, to empower

them with education about contrast and lighting, and teach them compensatory strategies. It's not a cookie-cutter approach."

During an initial consultation, Lin reviews information from the patient's referring ophthalmologist, then performs a comprehensive examination to assess the patient's visual strengths and weaknesses.

"For example, one person may have good peripheral vision even if central vision is lost," Lin says. "Another may struggle with reading only when the contrast is low."

Armed with these insights, she suggests strategies and tools — from simple magnifiers to high-tech desktop reading devices — to help each person make the most of their existing vision.



## Bringing it home

Discussing such tools in a doctor's office and using them in daily life are two entirely different experiences. A unique aspect of the low-vision rehabilitation service is that Tanna teaches patients how to use these tools and strategies in their own homes.

"Often they've been struggling for so long they think it's normal," says Tanna, who has worked with low-vision patients for more than 20 years. "But everyone has different visual acuities and a different sweet spot in their vision they can use, even with macular degeneration or retinopathy."

In a typical 75-minute session, she observes how the patient functions in their home and assesses what they want and need to accomplish. Do they want to be able to "spot read" labels and bills or peruse books and magazines?

"It's about getting to know each person, their social support network and how they're coping with their impairment psychologically," she says. "If they also have cognitive issues, how do we adjust to make things simple enough for them to participate in a rehabilitation process?"

## Leveraging existing vision

Many of Tanna's patients are working professionals or serve on boards, so they need to be able to read reports and make presentations. Others are retired and may rely on their vision to play tennis or sew.

"I really want to know what their day-to-day life is like so that I can understand who they are and what their goals are," she says.

After setting realistic goals and establishing a care plan, Tanna makes one or more home visits to help each patient adjust their lifestyle and use vision tools and personalized techniques that enable them to continue the activities they enjoy. She also works with them to make adjustments as their vision changes over time.

"At the end of the day," she says, "we want our patients to thrive and have a good quality of life."

## MESSAGE FROM THE CHAIR

COVID-19 has challenged everyone over the last two years, but the Gavin Herbert Eye Institute has continued to grow and thrive. This year, we are on track to treat close to 70,000 patients and perform 4,000 surgeries — by far the most of any UCI Health surgical service.

Our Department of Ophthalmology rankings continue to rise as well. We are now among the nation's top 12 departments as measured by funding from the National Institutes of Health and we were awarded our first-ever T32 training grant from the National Eye Institute. This funding will support a multidisciplinary fellowship program to advance both basic science and translational research, helping us produce a new generation of scientists equipped to tackle the most perplexing challenges in vision and ophthalmology.

We are also expanding our training programs to include fellowships for uveitis, neuro-ophthalmology and pediatric ophthalmology — the latter in conjunction with Children's Health of Orange County (CHOC).

The eye institute continues to be an incubator of leading-edge research, including jCell, a novel technology developed by UCI ophthalmologists Henry Klassen, MD, PhD, and Jing Yang, MD, PhD, to treat retinitis pigmentosa, a rare, genetic condition that progressively destroys the retina's rod and cone photoreceptors. The technology is about to be tested for its safety and efficacy in a phase 3 clinical trial. Last year, our former low-vision specialist Rebecca Kammer, OD, PhD, joined parent company jCyte, to help conduct testing and evaluations of low-vision patients for the trial.

In addition, our own Krzysztof Palczewski, PhD, founding director of the eye institute's Center for Translational Vision Research, was elected a fellow of the prestigious National Academy of Sciences, one of many honors bestowed on this vision scientist whose contributions to the understanding of age-related macular degeneration and inherited retinal degeneration are advancing the development of new treatments.

As our practice and service to the community grows, we are pleased to welcome Stephen Prepas, MD, a highly regarded pediatric ophthalmologist with a long history in Orange County. He joins our outstanding pediatric ophthalmology team — led by Donny Suh, MD — and will be teaching our

residents and fellows while transitioning his private practice patients to the eye institute.

We're also happy to welcome optometrist Karen Lin, OD, who joins our Low Vision Rehabilitation Program. She brings more than 20 years of expertise in low vision, which she studied as a research fellow at UC Berkeley.

Our low-vision services are critically important for many patients. Although we successfully treat patients for a wide array of eye diseases, some still experience significant vision loss that requires further help and support. We're proud to provide comprehensive services to our low-vision patients, thanks to Dr. Lin and occupational therapist Nilima Tanna, whose work you can learn about on page two.

On your next visit, you'll notice that we have completed the buildout of the eye institute's second floor. Our retina and oculoplasty specialists have moved into this beautiful new clinical space, which they are sharing with colleagues from the UCI Health Dermatology Center.

Nearby, you will also see that construction is nearly finished on the UCI Susan & Henry Samueli College of Health Sciences, which includes an auditorium, conference facilities and a cafeteria, along with administrative and teaching space for the School of Medicine, the Sue and Bill Gross School of Nursing, the School of Pharmacy and Pharmaceutical Sciences and the Program in Public Health. We're excited to welcome our new neighbors.

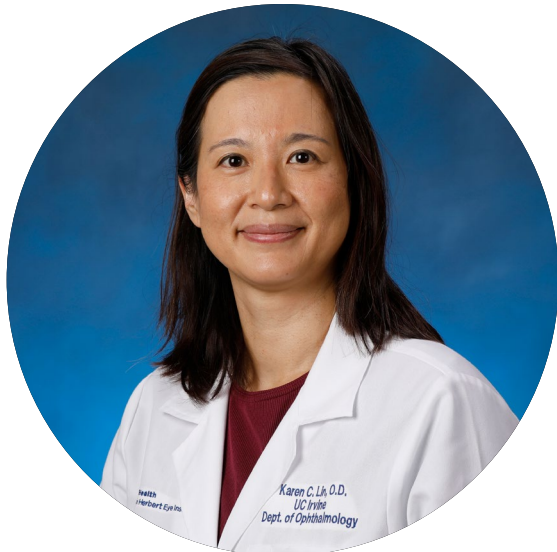
Finally, I am pleased to share with you that my role as chair of the Department of Ophthalmology has been renewed for another term. I am honored to continue serving my esteemed colleagues and our wonderful patients and I look forward to the great things we can accomplish together.



A handwritten signature in black ink that reads "Baruch D. Kuppermann". The signature is written in a cursive, flowing style.

**Baruch D. Kuppermann, MD, PhD**

*Director, Gavin Herbert Eye Institute  
Chair, Department of Ophthalmology*



Dr. Lin

## UCI Health welcomes new low-vision optometrist

Optometrist Karen Lin, OD, developed a passion for helping people with impaired vision as a young National Eye Institute research intern at UC Berkeley. There, macular degeneration patients in their 80s and 90s would trek up the campus' steep hills to participate in her laboratory studies.

"I really loved those patients, who were so resilient and had so many life stories to share," says Lin. "I wanted to learn how to make their lives more functional and instill hope. Back then, there wasn't as much technology as there is today, so now there's even more hope for low-vision patients."

Eighteen years later, Lin is excited to join our department faculty and the eye institute's Low Vision Rehabilitation Program, which combines the research and clinical expertise expected of an academic medical center with a hands-on occupational therapy approach to help low-vision patients navigate their daily lives.

"It's this awesome collaboration that drew me to UCI," Lin says. "I can do evaluations and calculations to make recommendations but having an occupational therapist who trains patients to use the devices in their own home, where the lighting or other factors may be different, is what makes our low-vision program such a rare find."

In her first few months, Lin says one of the most common questions patients ask is, 'How do I qualify to see you?'

"I want to emphasize that low vision is not just a number and you don't have to have a certain diagnosis to come to the clinic," she says. "Every individual is different, but when you feel that your vision is functionally impaired, we can help."

Ophthalmologists manage eye health and treat the disease that causes low vision, but it's Lin's role to focus on how a patient can make the best use of their existing vision. Initial office visits usually include a contrast test to assess the ability to distinguish shades of gray, a central visual field test to check for blind spots and a trial framing to place powerful lenses into a pair of wearable glasses.

"Those three tests give us a much better sense of what each patient is dealing with and a better sense of why a patient may respond differently to different devices and tools in the real world — even with the same pathology and same vision," says Lin.

Advancements in optical tools and new technologies like telescopic devices that attach to glasses provide new ways to cope with low vision. Lin tries to offer a mix of both high and low-tech solutions for each patient. The results can be profound.

Recently, a caregiver brought in a patient who was so uncommunicative they weren't sure if he could read English. When Lin put a pair of high-power reading glasses on the man, he perked up, began talking and reading aloud. Another patient cried tears of joy when she looked at a photo of her grandchild through a magnifying device. "Oh, that's what he looks like now!" the woman exclaimed.

"There are so many resources out there," Lin says. "When I see patients struggling, I tell them there are always things we can do to help you continue to enjoy life. We just have to take a different perspective."



Fran Newman

## Looking on the bright side

As the retired vice president of Cerritos College, Fran Newman, Ed.D, is a voracious reader and writer. She also volunteers with local charities and enjoys water skiing and daily runs on the beach. When she was diagnosed with age-related macular degeneration (AMD) — which has made her legally blind in one eye — she feared that life would pass her by.

Through the Gavin Herbert Eye Institute Low Vision Rehabilitation Program, occupational therapist Nilima Tanna has enabled Newman to remain independent and continue doing what she loves.

Over the course of three visits to Newman's Newport Beach home, Tanna marked frequently used buttons on her microwave and stove with bright orange puffy paint. She recommended using a different type of light bulb, arranged access to audio books on Newman's computer and showed her how to use her iPhone's magnification app. Tanna also demonstrated how wearing a sun visor in her home office could reduce bothersome glare.

But Newman's favorite tool by far is a digital reading machine that enlarges any text. She uses it daily to

read books about leadership and write summaries for busy executives.

"It's so easy to want to give up when you have age-related macular degeneration because there's no cure for it," says Newman. "But Nilima and the eye institute team have given me such useful and practical ways to help me cope with daily life."

Newman first became acquainted with the eye institute several years ago when she attended a presentation for senior citizens given by Director Baruch Kuppermann, MD, PhD. Impressed, she joined the eye institute's support group for AMD and low vision, then started seeing Mohammad Riazi Esfahani, MD, for her AMD and Marjan Farid, MD, for cataracts and dry eye disease.

"It means so much to me to have ophthalmologists who can help with the medical aspect and low-vision optometrists to help with daily life," says Newman. "The Gavin Herbert Eye Institute is so comprehensive and the low-vision program has given me so much confidence that I don't have to be a victim of my macular degeneration."



Dr. Garg

## Bringing visibility to keratoconus

During his fellowship at UCI Medical Center, Sumit (Sam) Garg, MD, brought his cousin from India to meet Roger Steinert, MD, Gavin Herbert Eye Institute's founding director and Garg's mentor. Due to keratoconus, a progressive condition that causes the cornea to thin and bulge outward into a cone shape, one of his cousin's eyes didn't function. The disease was so far along that a corneal transplant was the only treatment option, but he declined.

Keratoconus causes nearsightedness and irregular astigmatism, usually beginning when a person is in their late teens or early 20s and worsening over time. As a corneal specialist, Garg sees keratoconus patients every day. He is encouraged by treatment advancements that include scleral contact lenses and a minimally invasive procedure called corneal cross-linking, which works if the disease is caught early.

Corneal cross-linking uses a combination of eye drops of riboflavin, a type of vitamin B, and ultraviolet light to help strengthen the cornea's collagen bonds and prevent further weakening.

"My goal as a cornea transplant specialist is to not need to do corneal transplants for keratoconus patients in the

next 10 years," says Garg. "If we can screen and cross-link enough people prior to the stage of needing a corneal transplant, then it's possible."

Garg believes the National Keratoconus Foundation (NKCF), an institute outreach program, will be instrumental in achieving that goal. NKCF works to raise awareness, screen at-risk patients and provide the latest information on treatments and clinical trials to people grappling with the diagnosis. Genetic screening for the disease, now done with a simple cheek swab, helps contribute to earlier detection.

"Studies have found that when keratoconus is caught early, a patient's ability to live a more productive life is dramatically improved," says Garg, whose cousin maintains a job today thanks to his one unaffected eye.

Garg is so passionate about the foundation's mission that he and his wife, Romi, have become not just advocates but donors, too.

"Giving to the organization is fulfilling for me and my family," he says, "because I see the impact that NKCF has on patients every day."



## Vision researcher Krzysztof Palczewski honored

Krzysztof Palczewski, PhD, the Irving H. Leopold Chair in Ophthalmology, was elected to the National Academy of Sciences, one of the world's most respected scientific organizations.

## Physicians and Researchers

### 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  
Olivia Lee, MD  
Matthew Wade, MD

### Cataracts and Glaucoma

Austin Fox, MD  
Ken Y. Lin, MD, PhD  
Sameh Mosaed, MD

### Comprehensive Ophthalmology

Kavita K. Rao, MD

### Low Vision

Karen Lin, OD

### Neuro-ophthalmology

R. Wade Crow, MD  
Lilangi Ediriwickrema, MD  
Vivek Patel, MD

### Oculoplastics

Lilangi Ediriwickrema, MD  
Jeremiah Tao, MD

### Ophthalmic Pathology

Maria Del Valle Estopinal, MD

### Optometry

Joseph Bui, OD  
Timothy Scott Liegler, OD  
Kailey A. Marshall, OD  
Annabelle Storch, OD  
Kimberly Walker, OD

### Pediatric Ophthalmology

Charlotte Gore, MD  
Stephen Prepas, MD  
Donny Suh, 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 Riaz, MD

### Research

Andrew Browne, MD, PhD  
Lbachir Benmohamed, PhD  
James V. Jester, PhD  
Tibor Juhasz, PhD  
Vladimir Kefalov, PhD  
*Vice Chair, Research*  
M. Cristina Kenney, MD, PhD  
Timothy Kern, PhD  
Henry J. Klassen, MD, PhD  
Philip Kiser, PhD  
Baruch D. Kuppermann, MD, PhD  
Anthony B. Nesburn, MD  
Krzysztof Palczewski, PhD  
Eric Pearlman, PhD  
Magdelene Seiler, PhD  
Dorota Skowronska-Krawczyk, PhD  
Jing Yang, MD, PhD

### Uveitis

Sanjay Kedhar, MD  
Olivia Lee, MD

## Thank you to our donors

*Thank you to all our donors, with special appreciation to those who have made contributions of \$5,000 or more in support of our research, educational and community programs from July 1, 2021–June 30, 2022*

Nancy & Paul Arentsen	Marsha & Bill Link, PhDs
Argyros Family Foundation	Sandra & C. Ronald Livingston
Avellino Lab USA, Inc.	Geneva M. Matlock, MD
Cynthia & William Bone	Kelly & James Mazzo
Barbara & Alexander Bowie	The Nicholas Endowment
BrightFocus Foundation	Thomas Nielsen
Anne Brownstein	RD Olson Family
Carl Zeiss Meditec, Inc.	Elise & Carl Perkins
Janet & John Cauffman	Sandy Quinn
Esther & James Cavanaugh, PhD	Regenesys Bioremediation Products
Pamela & J. Stuart Cumming, MD	Research to Prevent Blindness
Discovery Eye Foundation	Retina Research Foundation
The Doyle Foundation, Inc.	Diane Ross-Glazer, PhD & Michael Glazer, PhD
Martin Emanuele, PhD	Pamela & Leonard Schaeffer
EyeJust, LLC	Katharine & Jack Schoellerman
Ronald Ford	Robert Schrimmer
The Foundation for Retinal Regeneration	Janet & Dennis Shannon
Romila & Sumit Garg, MD	Sandy Shepherd
Glaukos Corporation	Sandi & Ronald Simon
Josephine Herbert Gleis Foundation	Jennifer Simpson, MD & Ronald Kurtz, MD
Sonya Celeste-Harris & Richard Harris	Glenys & James Slavik
Ninetta & Gavin Herbert	Lon V. Smith Foundation
Herbert Family Foundation	Pauline & Michael Smith
Herbert 2000 Dynasty Trust	Dea Stanuszek
Herbert Family Trust	Ezzat Wassef, MD
Renee & Peter Horner	Marilyn & Steven Weber
Johnson & Johnson Vision Care Inc.	Noly & Ted Wei, MD
Diane & Harry Johnson	Joy & Scott Whitcup, MD
M. Cris Kenney, MD, PhD & Anthony Nesburn, MD	Jing Yang, MD, PhD & Henry Klassen, MD, PhD
Laura Khouri & Michael Hayde	
Jantana & Baruch Kuppermann, MD, PhD	
Carol & Doron Lean	
Lean Engineering	
Robin & JK Leason	

**To make a gift to the Gavin Herbert Eye Institute, please contact Amber Harness, associate director of development, at [aharness@uci.edu](mailto:aharness@uci.edu) or 949-824-9021.**

# UCI Health Gavin Herbert Eye Institute

850 Health Sciences Road  
Irvine, CA 92697

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

## VISIT THE OPTICAL SHOP

Call 949-824-7690 to schedule your appointment now!

Monday–Friday: 8 a.m.–5 p.m.

Proceeds from our optical shop support sight-saving research and help patients diagnosed with keratoconus pay for specialty lenses not covered by insurance.

## EVENTS

### Community lectures

Join us for our free seminars where you will learn about the causes, symptoms and treatment of eye-related conditions. Our goal is to further educate the public on eye health and related topics to help improve our community's overall health and well-being.



Registration is easy. Access the registration form using this QR Code or register at:  
[www.uci.edu/lectureRSVP.html](http://www.uci.edu/lectureRSVP.html)  
949-824-7243

### Eyes and Sleep:

**September 13, 2022 | 7:00 pm**

Dry eye and other related issues | Olivia Lee, MD

Sleep and eye health: Focusing on sleep apnea and its treatment | Kevin Im, MD

Sleep apnea, saggy eyelids and anterior ischemic optic neuropathy | Lilangi Ediriwickrema, MD

### Diabetes:

**October 11, 2022 | 7:00 pm**

Diabetic eye disease: What it is and how it's treated  
Mitul Mehta, MD

Dietary Management of Diabetes  
Qin Yang, MD (UCI Diabetes Center)

### Optical Shop

**November 8, 2022 | 7:00 pm**

Annual eye exams and new lens technology  
T. Scott Liegler, OD

## CLINIC LOCATIONS

### Irvine

850 Health Sciences Road  
Irvine, CA 92617

To make an appointment, call 949-824-2020

### Orange

101 The City Drive South, Pav. 2, Bldg. 30A  
Orange, CA 92868



### Clinical Trials:

Gain access to innovative care while helping researchers study the prevention, diagnosis and treatment of eye conditions.

To participate in a clinical trial, scan the QR code or email [CCREnrollment@hs.uci.edu](mailto:CCREnrollment@hs.uci.edu)