

SUMMER 2024

enVISION

News from the UC Davis Eye Center



health.ucdavis.edu/eyecenter

 UC Davis Eye Center

The Tschannen Eye Institute at UC Davis



OUR VISION

Our vision is to be the world's transformational leader in collaborative vision research and the development of cures for blinding eye diseases, from cornea to cortex.



OUR MISSION

We will realize our vision through pioneering collaborative vision research, providing state-of-the-art, world-class eye care, and training superbly prepared ophthalmologists and vision scientists. .

Through community outreach and relationship building, we support and promote the UC Davis Eye Center as the premier provider of quality eye care for Northern California and of leading-edge vision research for the world.





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Eye to Eye

Eighteen months ago, we had the great pleasure of opening the doors of the Ernest E. Tschannen Eye Institute, an award-winning building that has become a place of inspiration both for our patients as well as our care providers.

Of course, a building is only distinguished by the programs and practitioners that it houses, and I am very pleased to report that the growth of our talented faculty has been robust and exciting. We are continuing the recruitment process to bring the most capable and dedicated providers to the Department of Ophthalmology & Vision Science at UC Davis. Hopefully, by the end of 2024, we will have completed our goal of providing the best of general ophthalmology as well as specialty care to the patients of our region and beyond.

A central effort has been to expand our services to the pediatric population—often underserved around the nation due to a shortage of providers who train to treat our children. At UC Davis, we are very fortunate to have three remarkable pediatric ophthalmologists who are featured in this edition of *EnVision Magazine*. The team is headed by Dr. Nandini Gandhi, M.D., a native of Sacramento. She has been joined by Drs. Marcela Estrada and Benjamin Jastrzembski, and as a team, they address the broad range of pediatric ophthalmology, beginning with abnormalities that occur in the newborn (retinopathy of prematurity), pediatric cataracts, glaucoma, and both pediatric and adult strabismus (eye muscle disorders).

Vision care in the child demands a very special set of skills that are the basis of establishing rapport with the child, navigating the sometimes-challenging diagnostic examination, and the ability to communicate effectively and compassionately with concerned parents. I am very confident that here at UC Davis, we have three remarkably talented pediatric ophthalmologists.

Our pediatric service represents the next phase of our growth as the Ernest E. Tschannen Eye Institute expands to the region and the nation. Our kids are in the best of hands.



A stylized, cursive signature of Mark J. Mannis in black ink.

Mark J. Mannis, M.D. F.A.C.S.

Natalie Fosse Endowed Chair in Vision Science Research
Chairperson
Department of Ophthalmology & Vision Science
Director, Ernest E. Tschannen Eye Institute



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KIDS DON'T KNOW THEY NEED GLASSES!

7 VISION TIPS FOR PARENTS

BY LISA HOWARD

Vision problems can affect schoolwork. Dr. Marcela Maria Estrada, an Assistant Professor of pediatric ophthalmology, offers seven tips to help parents identify whether their child might have a problem with their eyesight and offers suggestions for maintaining healthy vision in young eyes.





1 KIDS DON'T KNOW THEY NEED GLASSES.

“Kids generally don’t know they have bad vision. They adapt to whatever eyesight they have,” Dr. Estrada said. But there are some clues for parents. “If you notice your child is squinting or standing really close to the television — or if they hold books, phones or tablets really close to their face — they may need glasses.”



2 POOR EYESIGHT CAN IMPACT KIDS' SUCCESS AT SCHOOL.

If you have a child who does well with homework and reading materials but is inattentive in class and has behavioral issues, it may be a problem with the child’s vision. “Kids, particularly young kids, don’t know they should be able to see everything that’s written on the board,” Dr. Estrada said. Vision problems are common. According to the Centers for Disease Control, approximately 6.8% of children younger than 18 in the U.S. have a diagnosed eye and vision condition.

~6.8%
OF CHILDREN
YOUNGER THAN 18
IN THE U.S.
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EYE AND VISION
CONDITION.



3 TOO MUCH SCREEN TIME CAN PERMANENTLY CHANGE YOUR CHILD'S VISION.

Most kids have tablets or cellphones packed with videos, games and social media. Spending hours looking at these screens increases eye strain for kids. But Dr. Estrada has another concern. “Spending too much time doing close work, like looking at a screen, can permanently change the development of their eyes. It can lead to more nearsightedness, or myopia, leading to a lifetime of glasses,” Dr. Estrada said. The American Academy of Pediatrics offers several resources for parents on managing screen time for kids.

4 FARTHER IS BETTER WHEN IT COMES TO SCREENS AND EYE HEALTH.



“A television across the room is better for a child’s vision than a tablet close to the face,” Dr. Estrada said. “Instead of letting your child stare at a phone or tablet, try streaming the content so your child can watch it on a television or large monitor. Farther is better.” The same is true for working at a computer. “Having a separate monitor at arm’s length is better than working up close. You can always increase the font size to read what’s on the screen.”



SUNLIGHT AND VITAMIN D CAN SLOW THE PROGRESSION FOR KIDS WHO ARE NEARSIGHTED

5 PLAYING OUTDOORS CAN HELP YOUR KID'S VISION.



Dr. Estrada recommends that kids get at least one hour of outdoor time. “We don’t spend as much time outside as previous generations. But sunlight can help prevent nearsightedness. Sunlight and vitamin D can also slow the progression for kids who are nearsighted,” Dr. Estrada said. When kids play outdoors, it also means they focus on things in the distance, relaxing the eye. But remember the sunglasses. “Kids need sun protection for their eyes as much as adults,” Dr. Estrada said.

6 VISION CHANGES CAN HAPPEN QUICKLY.

“Even if your child’s vision has been normal, that can change. We see vision changes and progression in the strength of glasses sometimes in just six months,” Dr. Estrada said. Any misalignment of the eyes, even if intermittent, should be evaluated. She also suggests parents ask their child to cover each eye and then ask if they see better in one than the other. The child may not know one eye is less strong because the stronger one compensates. “If you think your child might have vision problems, make an appointment to have their vision screened,” Dr. Estrada said.



7 VISION SCREENINGS ARE AVAILABLE MANY PLACES.

A child’s vision can be screened by a pediatrician, family physician, optometrist, ophthalmologist, or trained health care provider. Vision screenings are also offered at schools, community health centers or community events. In California, kids get their vision screened at school in kindergarten, second, fifth and eighth grades.

For more information about healthy vision for kids, visit the National Eye Institute (NEI) for Kids at <https://www.nei.nih.gov/learn-about-eye-health/nei-for-kids>.

PEDIATRIC OPHTHALMOLOGY AND ADULT STRABISMUS SERVICE UPDATE

BY NANDANI GANDHI, M.D.

It is a truly exciting time of growth, innovation and collaboration on the Pediatric Ophthalmology and Adult Strabismus service at the Tschannen Eye Center at UC Davis. Our service has welcomed two new outstanding full time faculty members: Drs. Marcela Estrada and Benjamin Jastrzembki join Dr. Nandini Gandhi on “Team Peds,” enhancing our capacity to serve our growing patient population.

A STELLAR TEAM

Dr. Marcela Estrada is a native of Lodi and joined our department in October 2020. She completed her ophthalmology training at the University of Washington and her pediatric ophthalmology training at the renowned Children’s Hospital of Philadelphia. We were thrilled that she decided to return to her home state and bring her passion for children’s eye care to our team.

Dr. Benjamin Jastrzembki is the newest member of our department, having joined our group in May 2023. He completed his ophthalmology training at Massachusetts Eye and Ear Infirmary, and his fellowship training at the internationally acclaimed SickKids Hospital in Toronto. We are grateful that he ventured across the country to bring his expertise in both pediatric ophthalmology and adult strabismus to our team.

Dr. Nandini Gandhi, a Sacramento native, has been a part of the UC Davis department since September 2011, and currently serves as chief of the service. She was thrilled to be a part of these recent recruitments that helped grow the pediatrics division.

The service is also supported by Tania Usner, a certified orthoptist who has been with the department since 2013 and whose specialized training in eye movements help us provide comprehensive care to our patients.



From Left to Right: Dr. Nandini Gandhi, Dr. Benjamin Jastrzembski, and Dr. Marcela Estrada



Dr. Marcela Estrada

PROVIDING COMPREHENSIVE PEDIATRIC EYE CARE TO THE CHILDREN OF NORTHERN CALIFORNIA

There is currently a shortage of pediatric ophthalmologists nationwide resulting in large geographic gaps in eye care for children. The Pediatrics service at the UC Davis Eye Center is proud to serve children from all over the state — from as far north as the Oregon border, west to the coast, and well into the Central Valley. Our providers care for children with common ophthalmic problems such as strabismus (ocular misalignment), amblyopia (commonly referred to as “lazy eye,”) refractive error (nearsightedness or farsightedness), and nasolacrimal duct obstruction (excessive tearing from birth). We also provide care for children with less common visually threatening issues such as congenital or juvenile cataracts. Finally, the pediatrics service participates in the treatment of retinopathy of prematurity, a potentially blinding condition in premature infants that requires timely and effective treatment by specially trained providers. As we treat these common and serious conditions, our collective aim is to keep the child at the center of the conversation, and to engage the family in the child’s treatment and continued care.

PROVIDING CARE FOR ADULTS WITH DOUBLE VISION

The Pediatric Ophthalmology service also provides medical and surgical care for adults with ocular misalignment and double vision. Some of these patients had strabismus in childhood, while others have adult-onset strabismus as a result of a stroke or other neurological issues later in life. Our patient-centered approach and multi-faceted team allow us to talk with our patients about their visual goals and help achieve them, whether it be through optical correction, surgery, or a combination of the two.

NEW DIRECTIONS IN RESEARCH

Bringing their research interests and expertise to our department, our new faculty will be taking research in pediatric ophthalmology to new heights.

Dr. Benjamin Jastrzembki is a leader in the Pediatric Eye Disease Investigator Group (PEDIG), a national network that facilitates multi-center clinical research on vision disorders affecting children. Outcomes of PEDIG’s robust and well-designed studies have historically helped set the standard of care for many common pediatric eye disorders. Dr. Jastrzembki currently serves as the co-chair for the newest Amblyopia

Dr. Benjamin Jastrzembki



“OUTCOMES OF PEDIG’S ROBUST AND WELL-DESIGNED STUDIES HAVE HISTORICALLY HELPED SET THE STANDARD OF CARE FOR MANY COMMON PEDIATRIC EYE DISORDERS.”



Treatment Study and serves as the UC Davis site Principal Investigator. He also serves on the Chalazia Clinical Trial planning committee, guiding the design for a study on treatment of chalazia, or styes, in children. We look forward to contributing to PEDIG studies under his leadership.

Dr. Estrada brings to UC Davis her interest in retinopathy of prematurity (ROP) in neonates. The treatment of ROP is a rapidly evolving field, and current research is dedicated to identifying the most effective and safe treatment. Dr. Estrada has taken the lead at UC Davis on recruiting for the ROP4 study, a PEDIG study looking to identify the optimal dose of Bevacizumab, a medication used in the treatment of ROP. In so doing, Dr. Estrada will be furthering our understanding of this important disease and how best to treat these vulnerable patients.

EXCELLENCE IN EDUCATION

The presence of three full time faculty members affords our residents an extremely robust clinical and surgical experience on the pediatric ophthalmology service. Our PGY3 residents spend three months on the service and by the end of the rotation are often functioning at the level of a seasoned fellow, participating in the care of both common and highly complex ophthalmic disorders in children and adults. The pediatrics team looks forward to generating interest and excitement about the field among the residents, with an eye toward inspiring the next generation of pediatric ophthalmologists to serve the nation's growing need. •



Dr. Nandini Gandhi



OPTICAL SHOP

Ask an Eye Center staff member today!

UC Davis Eye Center

Ernest E. Tschannen Eye Institute

4860 Y Street, Suite 1E, Sacramento, CA 95817

916-734-6602 Appointments

916-734-6650 Laser Eye Surgery (LASIK) Appointments

916-734-6300 **Eye Center Optical Shop**

UC Davis Eye Services in Davis

2035 Lyndell Terrace, Suite 100, Davis, CA 95616

916-734-6602 Appointments

530-747-3360 **Davis Optical Shop**

UC Davis Eye Services in Folsom

251 Turn Pike Drive, Suite 1070, Folsom, CA 95630

916-734-6602 Appointments

916-357-4888 **Folsom Optical Shop**

UC Davis Eye Services in Roseville

1620 E. Roseville Pkwy, Suite 200, Roseville, CA. 95661

916-734-6602 Appointments

916-746-6401 **Roseville Optical Shop**

<https://health.ucdavis.edu/eyecenter/>



Are Over-the-Counter Eye Drops Safe?

BY LISA HOWARD

An expert explains why there have been so many recalls and how to pick safe eye drops

The Food and Drug Administration (FDA) recalled dozens of over-the-counter lubricating eye drops and artificial tears in 2023 due to contamination and unsafe manufacturing practices.

The recalls began in February 2023, when three brands were withdrawn, including one linked to serious infections, vision loss and four deaths. Additional recalls in August, October and November left consumers confused about whether over-the-counter eye drops — which are used to treat conditions like dry eyes — are safe to use.



Gary D. Novack, a clinical professor in the UC Davis Health Department of Ophthalmology & Vision Science, explains why there have been so many eye drop recalls this year and how people can pick safe products.

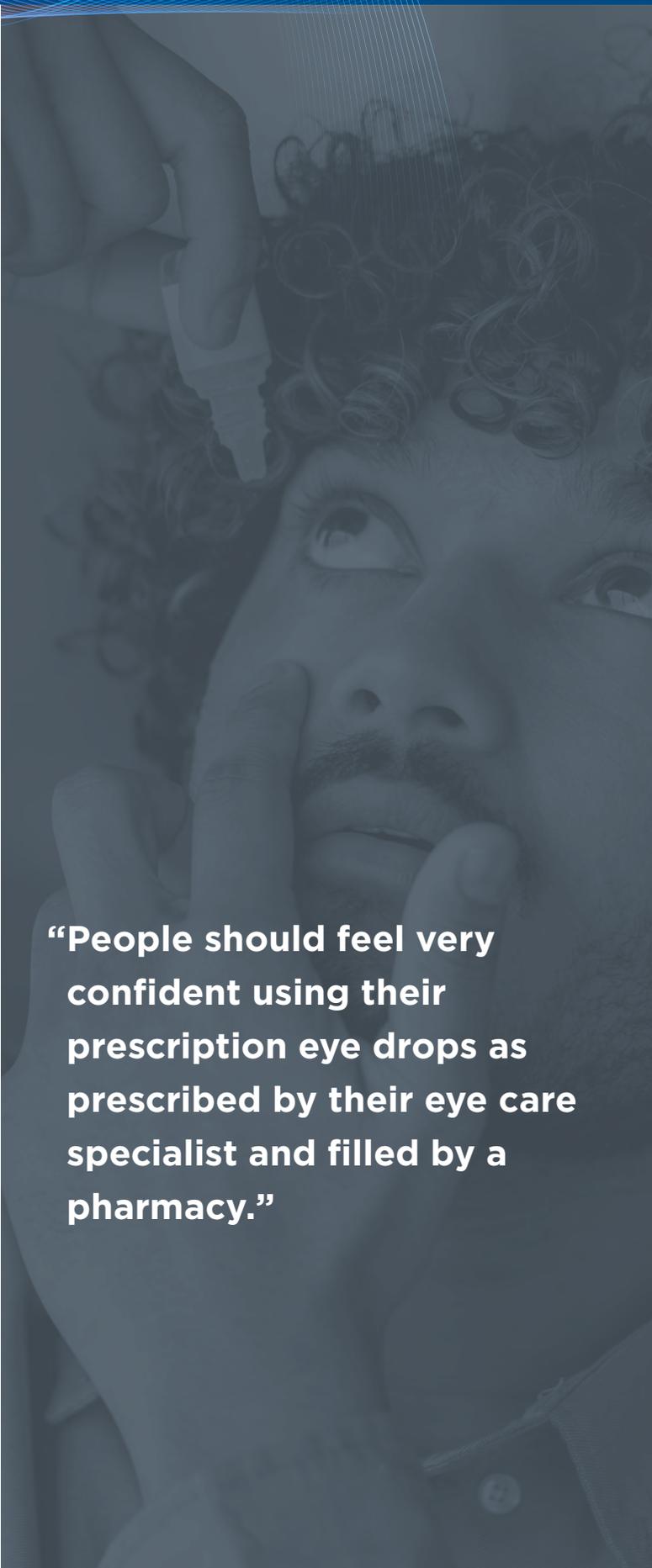
Q Is it safe to use over-the-counter eye drops?

A If an eye drop has been recalled, it should no longer be on the shelf. So, when you go to a drugstore, pharmacy, or superstore, all the eye drops available for purchase should be safe. People may need to be more cautious if buying online, but the recalled products should have also been removed from online stores.

One thing to note is that most of the recalled eye drops are names that aren't very familiar. They tended to be store brands and little-known brand names. To date, none of the recalled eye drops came from major ophthalmic pharmaceutical firms. These companies include Alcon, which makes Systane; Bausch and Lomb, which makes SootheXP; Allergan, which makes Refresh; and Johnson & Johnson, which makes Blink. Some people may be more comfortable sticking with those brands. Another way to ensure safety is to make sure that the eye drops have not expired.

Q Why have there been so many eye drop recalls?

A There are recalls from the FDA and manufacturers all the time — it's part of the quality-control process. But this year, we've seen an especially large number of recalls in ophthalmic products. Now that the public health emergency phase of the pandemic is over, the FDA is doing more inspections, and they are finding a number of issues at manufacturing plants. Manufacturing products like eye drops is especially an issue because they have to be sterile, free from germs and contamination, and stable, meaning they retain their properties over time. It's also important that the bottles in which these eye drops are placed are also sterile or, in some cases, have preservatives. That's been an issue for several products.



Q Were prescription eye drops part of the recalls?

A No prescription eye drops have been recalled. Prescription eye drops can include antibiotics for some types of infections, steroid drops to treat inflammation and medication to treat glaucoma. People should feel very confident using their prescription eye drops as prescribed by their eye care specialist and filled by a pharmacy. To date, the recalled drops have all been over-the-counter eye drops.

Q What should people do if they have eye drops that they purchased a while ago?

A To find out if a product has been recalled, one can check with the pharmacy or store where they purchased the products, contact the manufacturer, or check the FDA website. People should also check the expiration date and throw away any expired products.

Q Are infections from eye drops common?

A Infections from eye drops are very rare. The pharmaceutical industry goes to a lot of effort to make eye drops that are sterile and stable. So, it's very rare to get infections from eye drops. However, what we learned in 2023 is that it can happen. It's serious not only for potentially losing vision, but in some rare cases patients developed systemic infections and died. So any sign or symptom of an eye infection, or any use of products that have been recalled, is a significant issue and patients should take this seriously. •

“People should feel very confident using their prescription eye drops as prescribed by their eye care specialist and filled by a pharmacy.”

AN EYE ON THE PAUL HOM ASIAN CLINIC

The Paul Hom Asian Clinic (PHAC) is one of the oldest student-run clinics in the United States. It was founded in 1972 to address the socioeconomic, cultural, and language barriers faced by new immigrant Asian families. The clinics offer primary care services weekly and monthly specialty care services that include cancer screening, women’s health, vaccinations, musculoskeletal, psychiatry, neurology, hepatology, cardiopulmonary, dermatology, and ophthalmology.

Linguistically appropriate care is provided to patients in their respective languages of Cantonese, Vietnamese, Mandarin, Taishanese, Korean, and Hmong. The clinic currently provides primary care services to approximately 100 patients per month. Paul Hom Asian Clinic is one of the thirteen UC Davis School of Medicine affiliated student-run clinics where physicians, medical students, and undergraduate students work alongside each other to improve the access to care in the greater Sacramento region. The other student-run clinics are Clinica Tépatí, VN Cares, HLUB, Imani Clinic, Shifa Clinic, Joan Viteri Memorial Clinic, Bayanihan Clinic, The Willow Clinic, Knights Landing One Health Center, Gender Health Clinic, Nadezhda Clinic, and R.I.V.E.R. clinic. Each clinic focuses on a different ethnic or socioeconomic group. For example, Bayanihan Clinic serves the Filipino community, and Willow Clinic serves the unhoused population.

The PHAC has collaborated with the UC Davis Eye Center since 2003 when ophthalmologists from the Eye Center volunteered to participate in an eye screening event held at the Paul Hom Asian Clinic Annual Health Fair. Dr. Lim remembers, “Dr. Ronald Jan (recent medical director of the PHAC) came into my office one day and implored me to participate in the clinic. If you don’t do it, who will?” In 2009, eye services expanded to provide quarterly free eye exams for the locally underserved. The clinic sees roughly 15 patients per quarter and has served approximately 780 patients to this date. Most of the patients that come to our clinic are Asian American, a population



Timothy Do, M.D.



Michele Lim, M.D.



Robert Miller, M.D., Clinical Professor and Volunteer Clinical Faculty, teaching at the Paul Hom Asian Clinic.

reported to utilize eye care services at a lower rate compared to White Americans. The primary goal of the ophthalmology clinic is to address the health inequities, health disparities, and social determinants that impact one's access to vision care. The services include a comprehensive screening that can incorporate slit-lamp exams, dilated diabetic eye exams, and even digital photos of the eye. The clinic also provides an opportunity for first- and second-year medical students to learn eye exam skills that will serve them later in their medical careers. Faculty volunteers from the UC Davis Eye Center teach medical students the basic elements of the eye exam such as checking visual acuity, eye pressures, and the pupil exam. The heart and soul of the clinic are the hundreds of UC Davis undergraduate students who play an important role as language interpreters and administrative support staff.

Since its inception, PHAC continues to host an annual Health Fair on the UC Davis School of Medicine campus for those in the local community seeking health services. The event consistently draws in an estimated 200 attendees each year. Some of the services offered include checking vitals (blood pressure, heart rate, oxygenation), diabetes screening, hepatitis B screening and vision screening. Health presentations on exercise, nutrition, smoking cessation, and dental hygiene were provided to patients in an effort to bridge the educational gap and improve their health literacy. In addition, volunteers and legal consultants help patients with voter registration, insurance enrollment, CalFresh enrollment, and other social services. During the health fair, the UC Davis Eye Center worked alongside with the Paul Hom Asian Clinic to host an additional walk-in vision screening clinic for the patients who could not attend the quarterly clinics. They were able to provide free vision screenings for up to 30 patients in a single day.

“The heart and soul of the clinic are the hundreds of UC Davis undergraduate students who play an important role as language interpreters and administrative support staff.”

Group photo of the Paul Hom Asian Clinic Staff





“. . . the UC Davis Eye Center worked alongside with the Paul Hom Asian Clinic to host an additional walk-in vision screening clinic . . . they were able to provide free vision screenings for up to 30 patients in a single day.”

During the COVID-19 pandemic, many health care services including eye care services were suspended, which significantly limited patients' access to care. This raised concern for the underserved community as many of these patients relied heavily on the Paul Hom Asian Clinic for all their health care needs. To address this, we designed a patient-centered at-home eye vision screening kit that could be easy to use and accessible to non-English speakers. The kit included a Rosenbaum near card that utilizes numbers for vision screening, which allows patients to read the numbers in their native language. An Amsler grid is also included to screen for any areas of central visual field loss that can be precipitated by many diseases of the macula or retina such as age-related macular degeneration. A multilingual informational packet containing educational material regarding common eye disorders and directions in using the kit were also provided to the patients.



Timothy Do, M.D., a third-year medical student performing an eye exam on a patient.



Now that the COVID-19 pandemic has receded, the quarterly ophthalmology clinics at Paul Hom Asian Clinic have restarted. With limited appointments and resources, this vision screening kit can be a good method to triage which patients should be prioritized to be seen in our clinic. On average, the patients seen at Paul Hom Asian Clinic seeking ophthalmology services live approximately 9 miles from the clinic. If patients do not have significant loss in vision determined by the vision screening kit or any alarming ophthalmic symptoms, those who live far can be spared the extra burden of transportation, and PHAC can also transition resources to patients with more pressing concerns. •



For the vision screening kit, we hope to expand the project to other student run clinics to further increase patients' access to eye care services. All in all, the PHAC is a cornerstone of culturally sensitive healthcare for the greater Sacramento region. The collaboration with the UC Davis Eye Center exemplifies the clinic's commitment to holistic care and medical education. Moving forward, PHAC's ability to leverage limited resources and embrace innovative solutions will undoubtedly continue to make a positive impact on the health and well-being of the underserved community it serves.

ERNEST E. TSCHANNEN EYE INSTITUTE BUILDING

Recognized regionally and nationally
for outstanding design

BY LISA HOWARD

The Ernest E. Tschannen Eye Institute Building received top awards from the Construction Managers Association of America (CMAA) and the Sacramento Business Journal.

WORLD-CLASS EYE CARE AND RESTORATION IN SACRAMENTO

The state-of-the-art building on the UC Davis Health campus in Sacramento **opened its doors** to patients in December 2022. The facility is dedicated to world-class eye care and sight restoration.

The Business Journal noted the building's exterior "is a modern synthesis of glass and wood. Inside, the center combines natural light and nature-themed art that is designed to provide a calming environment. Outside, there are spots to relax, including a promenade plaza that features artwork and seating as well as a third-floor terrace."

CMAA recognized the building on October 10 as **the most outstanding project in the nation for medical buildings** over \$50 million in cost. CMAA noted that the annual Project Achievement Awards serve as examples to promote professionalism and excellence in the management of the construction process.



The 78,500-square-foot building is an addition to the existing Ambulatory Care Center, which underwent a partial renovation. The four-story structure includes dedicated space for the **UC Davis Eye Center** clinic and operations, physician offices and conference areas. The third floor houses the **Division of Pain Medicine**, with clinic exam rooms and procedure rooms.

The new facility was started with an initial **\$18.5 million** gift from philanthropist Ernest E. Tschannen, whose sight was restored at the Eye Center. His continued to donate and his contributions now exceed **\$38.5 million**.

HGA, in partnership with **TEF Design** and **Chris Downey**, were architects for the building. **McCarthy Building Cos. Inc.** and **Vanir Construction Management** handled the construction. The building cost \$90.5 million to complete.

Architect Downey, who lost his sight in 2008, has dedicated his career to improving environments for people with vision-impairment. He and a consulting team worked closely with UC Davis Eye Center clinicians and scientists to fully incorporate their unique needs for the space, aiming for an aesthetic that integrated form with critical functions.

Some examples of design features for people with low vision include high-contrast colors and textures for easier navigation, signage with larger, easier-to-read fonts and a grassy outdoor area for patients with seeing eye dogs. •



The Sacramento Business Journal announced the **Best Real Estate Awards** recipients on September 7. The Ernest E. Tschannen Eye Institute Building was the top awardee in the Medical Category for an aesthetic that integrates form with the critical functions of its space.

To watch the KVIE Digital Studios video about the UC Davis Eye Institute | Focus on Health, please visit <https://www.pbs.org/video/uc-davis-eye-institute-vd4qsd/>.

ALUMNI *Highlights*



BRAD SANDLER

- + Clinician
- + Teacher
- + Humanitarian

Graduates of the Department of Ophthalmology at UC Davis reach across the spectrum of ophthalmic practice from solo private practices, to group practices, health care organizations, as well as academic ophthalmology. The department takes great pride in the versatility and contributions of our alumni.

Bradley J. Sandler, M.D. is a prime example, and he has distinguished himself as a dedicated clinician and clinical educator in our region.

Dr. Sandler attended high school in Hong Kong, where he played competitive basketball. During this time, a U.S. scout for the NBA visited and watched Brad play a game. After the game, the scout told him to “stick with his path of going to medical school.” Dr. Sandler recalls this honest advice and has been forever grateful.

He attended Tulane University (1975-79), where he received his Bachelor of Science degree in Biology, and received his M.D. degree at the University of Miami (1979-83). Moving to California, he joined us at UC Davis and completed his residency in ophthalmology in 1987, along with Drs. John Hills and Brent Reed. In addition to moving into his private practice, Dr. Sandler has continued to teach at the UC Davis Eye Center, as a volunteer clinical faculty for more than 25 years. He is known to infuse his academic understanding of



Dr. Bradley Sandler performing surgery.

disease with his down-home and personal approach to patients — an approach greatly admired by our residents.

With an initial interest in oculoplastics, he joined the multi-specialty Fairfield Medical Group. He later joined Dr. Frank Hull in private practice in Fairfield, California. This developed into a solo practice with offices in both Fairfield and Vacaville. Not only did Brad see patients in the office, but he also visited them on-site for patient care, including at the regional corrections facility. Even after more than 35 years in practice, he continues to cover three major trauma hospitals and provides emergency care. Throughout his career, he has developed a warm rapport with other doctors, primary care physicians, and optometrists in the surrounding area.

As the medical director of Solano Eye Specialists in Fairfield and Vacaville, Brad runs two bustling offices with full schedules and continues to perform “state of the art” surgery, continually learning new techniques.

“Dr. Sandler has a great work ethic and is one of the most hardworking doctors I have ever known,” said Gina Montes, Practice Manager for Dr. Sandler. “His staff comment on how proud and happy they are to work for a doctor who is all

“When I think about Dr. Sandler, I think about his kindness to patients and staff as well as his dedication to his practice.”

Gina Montes
Practice Manager

about ‘doing the right thing for the patient.’ He is a great listener, engages with patients and staff and makes them feel comfortable.”

At home, Brad is a devoted husband to Karen, his loving wife of 25 years. They are dedicated to making their life a dream come true. They keep a close connection with Brad’s wonderful son, Colby, who works in software development and lives in the nearby East Bay. Of course, they



Dr. Sandler with his wife, Karen

In his free time, Dr. Sandler plays guitar.

love their Great Dane, “Reacher,” referring to him as “our little 170-pound chihuahua.” He is still intensely focused on maintaining good health. One of his personal goals is to live a full 100 years, and to continue to work... That is, if Karen lets him.

From early in his career, Brad also emphasized the importance of “giving back.” He became a volunteer with the International Vision Volunteers (IVV), and in 2007, along with his wife Karen, he traveled to Zambia, Africa, on a cataract mission with Roger Carlson, M.D. They screened hundreds of patients and were able to perform high-quality surgery.

Feeling the need to continue in his charity efforts, Brad joined Bob Miller M.D., on a team with Liga International in

an underdeveloped region of Sinaloa, Mexico. For almost two decades, he has remained a critical part of the surgical mission, twice yearly. “Brad changed the focus of our care in San Blas,” notes Dr. Miller, friend and colleague to Brad for over 35 years. “From his urging, we began to bring a resident to these rural, international settings. Brad personally mentors them through difficult pterygium surgeries and other techniques.”

His friends and family describe him as “eclectic.” In addition to understanding the nuances of wine, he is fascinated by fine wrist-watches. He loves a variety of music, from jazz to classic rock to international music. In his free time, Dr. Sandler plays guitar, electric bass, and has recently ventured onto the keyboard. Perhaps stemming from his high school experiences, basketball still is center court in his life. For decades, he has remained a loyal



Volunteer clinical faculty



Dr. Casper, Dr. Miller, Dr. Sandler

All his friends know Dr. Sandler to be a tremendously generous man. He commonly shows up unexpectedly, with unique gifts of personal importance. He remembers special occasions and reaches out when someone is in need. His practice manager, Gina Montez smiles as she recalls “...the times he has handed over Sacramento Kings tickets to one of the staff members who needed a pick-me-up”. He shares his love of fine dining and wine tasting by hosting his annual office party each year on a limo bus to Napa Valley.

fan and season ticket holder of the Sacramento Kings, whether winning or not.

Considering him a “personal role model,” his friend Dr. Bob Miller stresses that, “Brad has all the characteristics of a man with great integrity and long-term vision. He has a unique thirst for knowledge in all arenas, and loves applying his abilities to help his family, his friends, and his patients.”

Dr. Brad Sandler exemplifies the profile of a high-level practitioner and humanitarian who works hard and, in so many ways, gives to all around him. He is, indeed, a source of pride, for our UC Davis Eye Center. ●

Ask Our Expert Doctors

We asked our expert doctors what questions their patients are asking and what is new in their field?

Glaucoma with Rebecca Chen, M.D.



How are glaucoma specialists incorporating new research into glaucoma management?

Selective laser trabeculoplasty (SLT) is an in-clinic laser procedure that lowers pressure in open angle glaucoma. The treatment takes around 5

minutes per eye, and the patient can immediately resume normal activities. The Steroids After Laser Trabeculoplasty Trial (SALT) found that newly diagnosed patients who received SLT laser instead of eye drops as initial therapy had similar pressure reduction, but lower incidence of dry eyes and lower risk of requiring future incisional glaucoma surgery. Glaucoma specialists are increasingly offering SLT laser earlier in the treatment ladder.

Minimally invasive glaucoma surgeries (MIGS) reduce eye pressure by enhancing drainage via the eye’s own outflow tract. They can be performed at the time of cataract surgery or as standalone surgery. Some advantages include faster recovery and lower risk of certain complications compared to traditional glaucoma surgeries. Recently published, longer-term results from the HORIZON trial suggest that patients who received the Hydrus microstent at the time of cataract surgery (versus cataract surgery alone) were less likely to require incisional glaucoma surgery during 5 years’ follow-up.

? What glaucoma clinical trials are being offered at UC Davis?

The COAST Trial is a multicenter study on SLT laser. In light of the SALT Trial’s support of early SLT treatment, ophthalmologists are interested in understanding SLT “best practices.”

The COAST Trial investigates 2 main study questions:

- 1) What is the optimal SLT laser energy setting — standard dose or low dose?
- 2) What is the optimal frequency for repeat SLT treatment — as needed if the effect wears off, or annually with a low-dose “touch-up?”

? As a glaucoma patient, why do I have dry eyes?

The tear film is composed of an inner mucous layer, middle aqueous layer, and upper oil layer. Deficiency or instability of any layer can result in ocular dryness and irritation. For glaucoma patients, common risk factors include age and medications. Long-term use of medically necessary eyedrops can disrupt the tear film or cause low-level inflammation affecting tear production. First-line treatments include ocular lubrication with artificial tears/gels and warm compresses over the eyes to improve Meibomian gland function. In resistant cases, some patients may benefit from prescription anti-inflammatory medications or punctal plugs to decrease tear drainage away from the eye. Glaucoma patients can also consider procedures such as SLT to minimize their eye drop regimen or try preservative-free formulations.

Macular Degeneration with

Kareem Moussa, M.D.



? What is new in field of macular degeneration?

Age-related macular degeneration (AMD) is the most common cause of vision loss in patients above the age of 65 in the United States. This disease affects the macula,

which is the central part of the retina. The retina is responsible for phototransduction, the process of turning light into electrical signals that our brain interprets as images. Retinal diseases such as AMD interrupt this critical step in visual processing.

We classify patients as having either the “dry” (also known as “non-exudative”) type, or the “wet” (also known as “exudative”) type. Many patients with mild dry AMD do not have any symptoms. As patients progress from the mild form to more advanced stage, known as geographic atrophy, they start to develop distortion in their central vision; and in its most advanced form, patients may lose their ability to read or recognize faces. In wet AMD, abnormal blood vessels can grow into the macula which can bleed and leak. In severe cases this process can cause rapid loss of vision.

In 2023, the United States Federal Drug Administration (FDA) approved the first intraocular injection for geographic atrophy, a remarkable breakthrough in the treatment for this blinding disease. As with any treatment, there are possible risks associated with these injections, and the decision to employ these injections in a patient’s treatment plan depends on the patient’s specific circumstance. Nevertheless, the availability of a treatment for geographic atrophy marks an exciting new chapter in the treatment of AMD and is a positive indication of therapeutic advances for this blinding disease.

As for Wet AMD, over the last couple of decades we have been fortunate to have access to intraocular injections that have saved many

patients from irreversible vision loss and helped them avoid the challenges that come with severe vision loss. In recent years, attention has turned to prolonging durability of these injections to allow patients to go for a longer amount of time between injections, with great success. Whereas previously some patients may have required an injection every 4 weeks to keep their disease under control, we are now able to extend intervals between injections for some patients to 3-4 months.

? What are our macular degeneration patients asking about?

Our patients are asking about gene therapy, the manipulation of a patient’s own genes to treat or prevent disease. Gene therapy has the potential to significantly transform how we approach treatment for retinal disease, and ongoing clinical trials are assessing the safety and efficacy of new therapeutics in this area. While we do not yet have an FDA-approved gene therapy for AMD, substantial progress is being made in this area and we anticipate significant advancement in the next decade.

? What can patients do about these floaters?

Floaters are common, especially as we get older, and for most patients they are a natural consequence of aging. For most of us, once we reach the age of 50 or 60, the gel inside the eye called the vitreous starts separating from the retina (this is called a “posterior vitreous detachment”) and this gel becomes more liquified. For many, this process does not result in any symptoms, but for some, they may see a lot of floaters as a result. Typically, these floaters resolve with time. It is important, however, to schedule a visit with an ophthalmologist if there is a sudden onset of many floaters, or if there are other associated symptoms such as flashes of light or a shadow or curtain in the visual field. While most floaters are benign, in some cases they may be a sign of another issue such as a retinal tear, retinal detachment, or inflammation in the eye — issues that warrant prompt evaluation and possible treatment to prevent vision loss.

Dry Eye with Jeffrey Ma, M.D.



? What are the causes of dry eye disease?

Dry eye disease (DED) afflicts millions of people and is especially prevalent in our greater community due to the dry climate of the Central Valley.

However, not all dry eye disease is the same. One

of the most common causes of DED is meibomian gland dysfunction, which is a problem in which inadequate meibum (oil) production from the eyelids results in a deficient lipid layer on the tear film and consequently more rapid tear evaporation. Certain autoimmune diseases such as Sjogrens syndrome can impair the lacrimal gland's ability to produce tears leading to DED. Other systemic conditions, such as graft-versus-host disease, cause inflammation of the ocular surface. Patients who have had prior ocular surgeries or procedures or take certain medications such as antihistamines or antidepressants may be at greater risk of DED as well.

? What services and treatments are offered at UC Davis for patients with dry eye disease?

Patients who are referred for dry eye disease undergo a comprehensive evaluation to first determine the cause(s) of their disease. Given the ever-increasing number of treatments available for dry eye disease, it is important to tailor the treatment regimen to the patient's cause and severity of their DED.

While over-the-counter artificial tears are the mainstay of dry eye treatment, patients with more severe dry eye disease sometimes require adjunct treatment. These may include prescription eye drops, ointments and punctal plugs (small plugs that are inserted into the opening of the tear drain to block the tears from draining away from the eyes).

Autologous serum eye drops are eye drops formulated from a patient's own blood serum—which contains many of the same anti-inflammatory substrates found in our tears—and may be offered if a patient has not shown improvement with other conservative treatments.

Specialty contact lenses such as scleral lenses are offered by UC Davis optometrists who are specially trained in fitting these lenses and can be effective for severe DED.

In-office thermal eyelid treatments are available as well for meibomian gland dysfunction. This procedure uses heat and compression of the lids to unclog blocked meibomian glands and restore healthy oil production.

? How did UC Davis Eye Center respond to the numerous eye drop recalls over the past year?

Many patients had questions and concerns about using their eye drops (both over the counter and prescription) in light of the various recalls of contaminated artificial tears in 2023. UC Davis Eye Center faculty and news media team were proactive in publishing up-to-date information on the UC Davis Health website, including patient-oriented recommendations for our local community. These timely articles made the UC Davis Health website one of the most widely accessed news sources nationwide on the subject of the recalls. Our own Dr. Gary Novack Ph.D. was interviewed on National Public Radio's Weekend Edition to shed light on the recall. His interview can be found on the NPR website:

<https://www.npr.org/2023/11/05/1210734121/fda-warns-of-infection-risk-from-several-eye-drops-on-the-market>

Cataracts with Jeffrey Caspar, M.D.



? What Is New in Cataract Surgery?

While some form of cataract surgery has been performed for over 2500 years, the first successful extraction of a cataract was in 1753. Since then, cataract surgery has undergone constant

innovation and improvement. Two of the more recent innovations are laser cataract surgery and intraoperative aberrometry.

Laser cataract surgery: Femtosecond laser assisted cataract surgery uses ultrashort bursts of highly focused light to perform portions of the cataract operation. A femtosecond is 1/1,000,000,000,000,000 or one millionth of one billionth of a second. The laser is guided by 3D spectral domain OCT (optical coherence tomography) to provide extremely high precision and reproducibility that is not possible with human hands alone. In addition, the laser can make small incisions to aid in the correction of astigmatism. All this in approximately 35 seconds. Use of the laser still requires a trip to the operating room for removal of the cataract and replacement with an artificial lens implant but the laser can help to reduce or possibly eliminate the need for glasses after cataract surgery.

Intraoperative Aberrometry: Intraoperative aberrometry uses a wavefront scanner attached to the operating microscope to provide real-time measurements of the patient's eye during surgery. These measurements help to validate the power of the lens implant to be used and can provide accurate measurement of all potential sources of astigmatism, something that is not possible in clinic. Astigmatism is a common imperfection in the curvature of the eye that creates blurred vision at both distance and near. This technology has been shown to provide more accurate cataract surgery results in patients who have undergone previous LASIK or PRK. It also aids in the placement of astigmatism correcting toric

lens implants, again with the goal of reducing or eliminating a person's dependence on glasses.

These two innovations have helped to improve the accuracy and satisfaction of patients who are undergoing cataract surgery. Be sure to discuss these options with your surgeon if you are considering cataract surgery.

? What Are Patients Asking About Cataract Surgery?

The most common question I get is "Do I really need to use all these drops?" Cataract surgery traditionally requires the use of an antibiotic and two anti-inflammatory drops used over approximately one month's time. This can add up to using nearly 200 drops during the recovery period! While most patients still elect this route, the use of combination eye drops or medicine delivered at the time of surgery can greatly reduce or even eliminate the use of drops after cataract surgery. This can be extremely helpful for patients who have difficulty with eye drops and may not have regular assistance. Many patients just enjoy the freedom from the extensive drop routine. You may want to discuss these options with your cataract surgeon. •



New Risk Factor Identified for Potentially Blinding Condition

BY LISA HOWARD

High altitude may put vision at risk for some individuals

Nonarteritic Anterior Ischemic Optic Neuropathy (NAION) is a relatively rare condition in which a loss of blood flow and oxygen delivery to the optic nerve cause sudden and painless vision loss in one eye. It is sometimes referred to as an “eye stroke.” Risk factors include advanced age, smoking, diabetes, high blood pressure, atherosclerosis, obstructive sleep apnea, certain medications and optic disc anatomy.

A small, single-center study published in the *Journal of Neuro-Ophthalmology* has revealed an additional risk factor: high altitude.

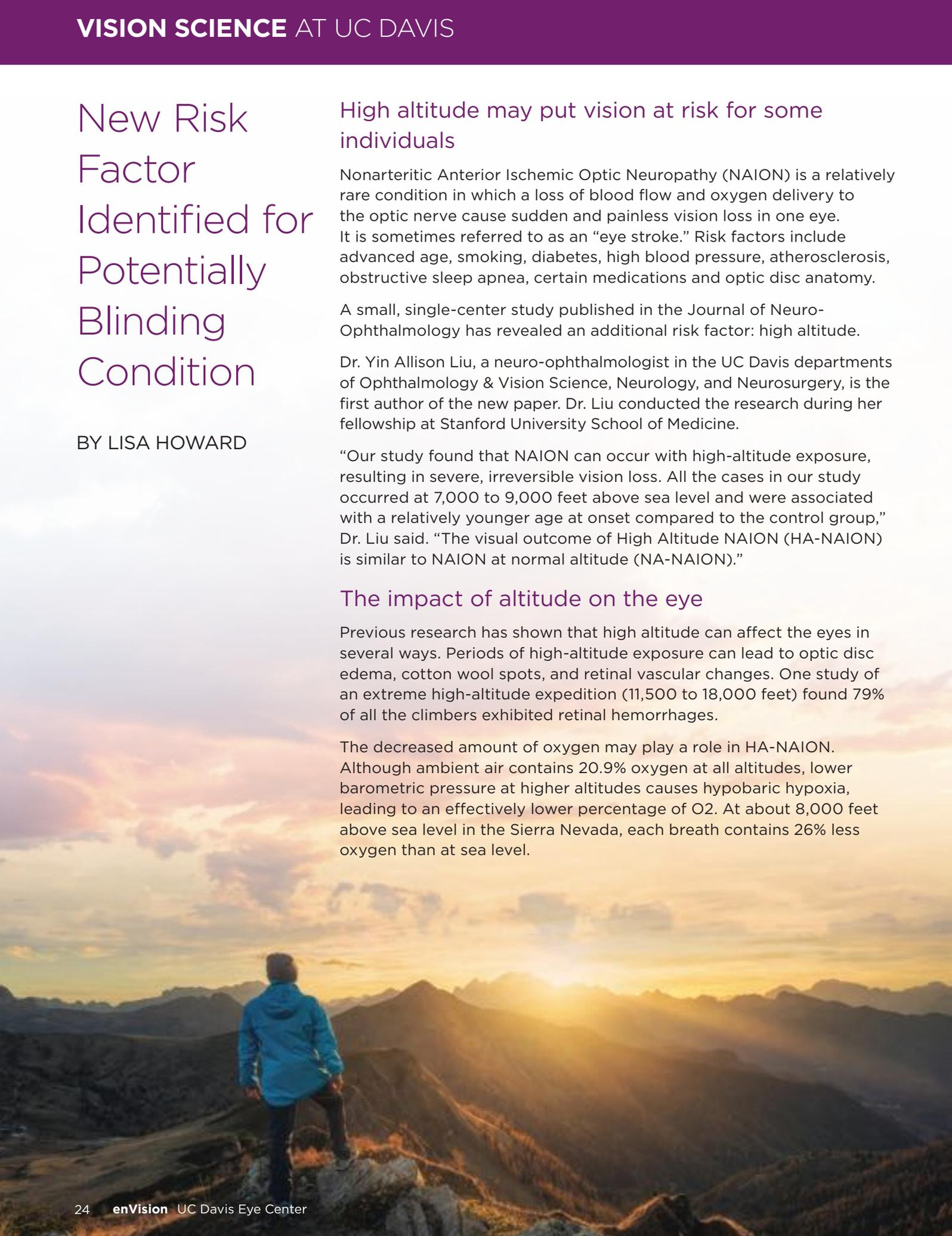
Dr. Yin Allison Liu, a neuro-ophthalmologist in the UC Davis departments of Ophthalmology & Vision Science, Neurology, and Neurosurgery, is the first author of the new paper. Dr. Liu conducted the research during her fellowship at Stanford University School of Medicine.

“Our study found that NAION can occur with high-altitude exposure, resulting in severe, irreversible vision loss. All the cases in our study occurred at 7,000 to 9,000 feet above sea level and were associated with a relatively younger age at onset compared to the control group,” Dr. Liu said. “The visual outcome of High Altitude NAION (HA-NAION) is similar to NAION at normal altitude (NA-NAION).”

The impact of altitude on the eye

Previous research has shown that high altitude can affect the eyes in several ways. Periods of high-altitude exposure can lead to optic disc edema, cotton wool spots, and retinal vascular changes. One study of an extreme high-altitude expedition (11,500 to 18,000 feet) found 79% of all the climbers exhibited retinal hemorrhages.

The decreased amount of oxygen may play a role in HA-NAION. Although ambient air contains 20.9% oxygen at all altitudes, lower barometric pressure at higher altitudes causes hypobaric hypoxia, leading to an effectively lower percentage of O₂. At about 8,000 feet above sea level in the Sierra Nevada, each breath contains 26% less oxygen than at sea level.



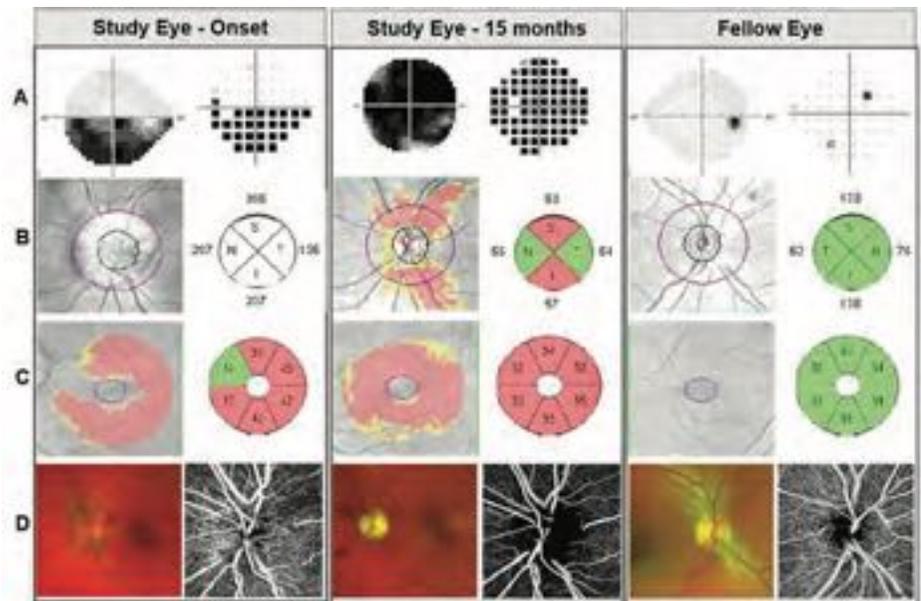
To find out if this high-altitude exposure could lead to NAION, the researchers studied 5 eyes of 5 patients who presented with vision loss within 2 weeks after exposure to high altitude.

The patients in the study did not have any major vascular risk factors, such as uncontrolled diabetes, hyperlipidemia, hypertension, prior ischemic or hemorrhagic strokes, transient ischemic attacks, or heart attacks.

These were compared to a control group of 28 patients with classic NAION that developed at sea level, and 40 controls. The researchers found that:

- ✔ All 5 patients with vision loss after high-altitude exposure had clinically confirmed NAION by a neuro-ophthalmologist within 3 to 21 days of onset and comprehensive follow-up evaluations.
- ✔ All 5 patients had disc-at-risk in the contralateral eye.
- ✔ 4 of the 5 patients had undiagnosed obstructive sleep apnea (apnea-hypopnea index 5.4 to 22.2), and one had existing systemic vascular risk factors.
- ✔ Visual outcomes were similar in patients with HA-NAION and NA-NAION.

Imaging of a patient with HA-NAION in left eye. The Images show the study eye at onset and at 15-month follow-up, and the fellow eye.



The patients in the study with obstructive sleep apnea were fitted with continuous positive airway pressure (CPAP) machines to be used every time they slept and napped.

After addressing all NAION risk factors, no new events occurred in the HA-NAION group within 2 to 8 years with or without repeat high-altitude exposure.

Risk factors for NAION

The prevalence of NAION is between 2.3 and 10.3 people per 100,000, or about 6,000 new cases per year in the U.S. It is the most common acute optic neuropathy in those older than 50 years. No single mechanism has been definitively demonstrated. However, specific risk factors have been identified.

Up to 97% of patients with NAION have small optic discs with small or absent optic cups. Small cup-to-disc ratios (a measurement of structures where blood vessels enter the eye) are vulnerable to NAION. Small ratios, typically 0.2 or less, are also known as crowded discs or “disc-at-risk.” Disc-at-risk is the strongest risk factor for developing NAION.

Patients with obstructive sleep apnea also have a more than six-fold increased risk of NAION compared with individuals without sleep apnea.



High altitude appears to be a risk factor for patients who are already vulnerable. For example, when patients with untreated obstructive sleep apnea stay at high altitudes, hypobaric hypoxia may promote central sleep apnea and aggravate hypoxemia.

Other risk factors for NAION occurring at high altitude may include:

- altitude on starting of the ascent
- higher and faster ascent
- longer duration at high altitude
- lower hematocrit
- increased strenuous activities
- high baseline intraocular pressure

CLINICAL TRIALS OVERVIEW

✓ 20 funded clinical trials

✓ 5 upcoming funded trials (pending approvals)

✓ 13 unfunded prospective trials

✓ 17 retrospective chart review studies

Dr. Liu notes that most commercial flights are pressurized to the equivalent of 6,000 to 8,000 feet elevation, meaning that a long flight may also be a risk factor for some patients. She is currently considering a multi-site study so that researchers can better understand the association between high-altitude exposure and NAION.

“Understanding the physiologic changes in patients at high risk before and after high-altitude exposure can help us more clearly identify changes that contribute to developing HA-NAION,” Dr. Liu said. “There is no effective treatment for NAION or HA-NAION at this time. Learning more about how to prevent it will help preserve vision for our patients.”

RESOURCES

- Read the study:
<https://doi.org/10.1097/WNO.0000000000001629>
- Non-Arteritic Anterior Ischemic Optic Neuropathy (NAION)
[https://eyewiki.aao.org/Non-Arteritic_Anterior_Ischemic_Optic_Neuropathy_\(NAION\)](https://eyewiki.aao.org/Non-Arteritic_Anterior_Ischemic_Optic_Neuropathy_(NAION))

Eye Center tests experimental gene therapy for wet age-related macular degeneration

BY LISA HOWARD

Ophthalmologists at UC Davis Health used an experimental gene therapy to treat a patient with wet age-related macular degeneration, or wet AMD. It was the first time the UC Davis Eye Center had used gene therapy.



“If approved, a gene therapy solution has the potential to maintain vision while reducing the number of injections for some patients by allowing the eye to continuously produce the medicine on its own.”



Glenn Yiu
Principal investigator for the clinical trial and a professor in the UC Davis Eye Center

The treatment was part of a randomized, partially masked, controlled, phase 3 clinical study evaluating the efficacy and safety of an experimental therapy, ABBV-RGX-314, for wet AMD. UC Davis Health is one of 93 sites in the U.S. participating in the clinical trial.

This investigational treatment is not FDA approved, and the efficacy and safety have not been established.

Wet AMD affects approximately 2 million people in the United States, Europe and Japan. It is a leading cause of vision loss among older adults.

“The current treatments for wet AMD may be life-long, and injections can be as frequent as every month,” said Dr. Glenn Yiu, Professor of ophthalmology at UC Davis Health and principal investigator for the new clinical trial. “If approved, a gene therapy solution has the potential to maintain vision while reducing the number of injections, by allowing the eye to continuously produce the medicine on its own,” Dr. Yiu said.

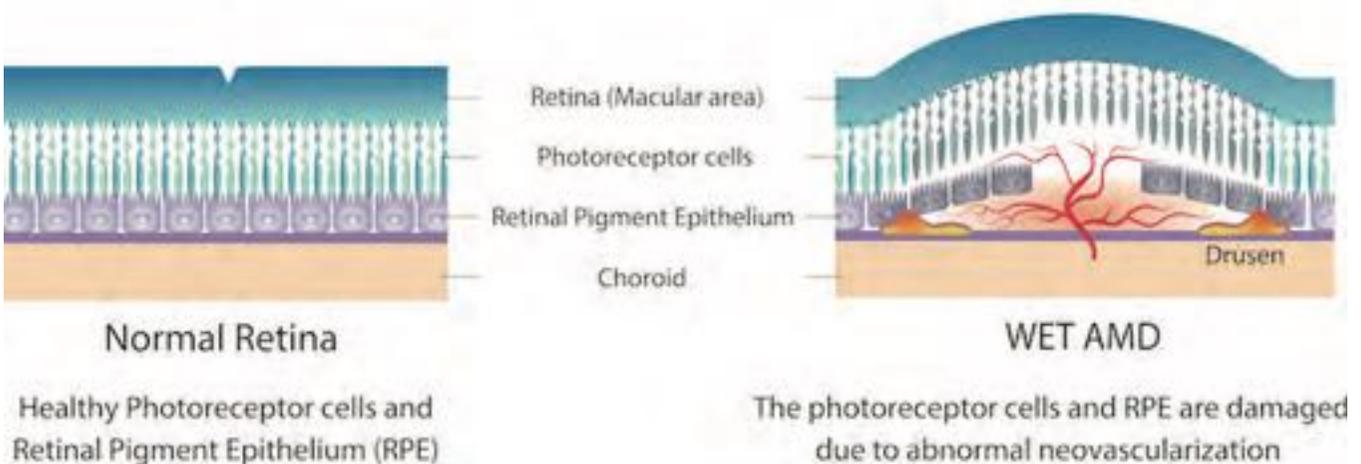
The surgical team at UC Davis Eye Center performs their first gene therapy in a human eye.

In AMD, the macula, the central area of the eye's lining that helps you see, becomes damaged. This can blur the central part of your vision, making it hard to drive or read. An early symptom of wet AMD is that straight lines may look distorted and wavy.



In wet, or neovascular AMD, abnormal blood vessels grow underneath the retina. These vessels lead to bleeding or fluid leakage in the back of your eye, causing vision loss. This process, known as "neovascularization," is largely driven by a growth factor called vascular endothelial growth factor (VEGF).

Treatments for wet AMD rely on repeated injections of drugs that block VEGF in the diseased eye.



In wet or neovascular AMD, abnormal blood vessels grow underneath the retina, leading to bleeding or fluid leakage in the eye.

Gene therapy may offer different approach

Unlike stem cell therapies used to treat eye diseases — which involve injecting cells with regenerative or restorative capabilities into the eye — gene therapy generally uses an empty viral envelope (a vector) to deliver a gene with specific genetic instructions for making protein.

ABBV-RGX-314 contains genetic instructions for making anti-VEGF proteins. After a single injection of ABBV-RGX-314 gene therapy, the eye can start to make the medicine on its own.

Dr. Yiu performed the first experimental gene therapy eye surgery at UC Davis Health in July of 2023. The procedure is more complex than administering a monthly injection. It includes a vitrectomy, where the viscous gel in the eye is removed and replaced with a saline infusion. The experimental treatment with its gene delivery vector is then injected underneath the retina.

Dr. Yiu will monitor whether the participant will continue to need monthly anti-VEGF injections in the coming months.

Dr. Paul Sieving is the former director of the National Eye Institute and is now a Professor of ophthalmology at UC Davis Health. He established the Center for Ocular Regenerative Therapy (CORT) for pursuing cell and gene therapies.

“It is noteworthy for patients in Northern California that UC Davis Health is doing experimental ocular gene therapy studies in the Department of Ophthalmology & Vision Science. What excites me most about this is the potential of Dr. Yiu’s work to reduce the repeated eye injections currently required for wet age-related macular degeneration,” Dr. Sieving said.



“What excites me most about this is the potential of Dr. Yiu’s work to reduce the repeated eye injections currently required for wet age-related macular degeneration”

Dr. Paul Sieving

Former director of the National Eye Institute

UC Davis Health has enrolled three patients in the clinical trial and plans to enroll more. Individuals aged 50 to 88 with wet AMD who have had prior anti-VEGF injections may be eligible to participate.

For more information, visit the study page, or email Denise Macias, clinical research supervisor, at dcmacias@ucdavis.edu. •



RESOURCES

Clinical Trials:

<https://classic.clinicaltrials.gov/ct2/show/NCT05407636>

Treatments for Wet AMD:

<https://www.nei.nih.gov/learn-about-eye-health/eye-conditions-and-diseases/age-related-macular-degeneration/treatments-wet-amd-advanced-neovascular-amd>

Study page:

<https://studypages.com/s/pivotal-2-study-of-rgx-314-gene-therapy-in-participants-with-namd-958879/?ref=gallery>

Early symptoms:

<https://medlineplus.gov/maculardegeneration.html>



HONORS & AWARDS

2023: Susanna Park, M.D., Ph.D., was the faculty sponsor and research co-mentor for **Arina Nisanova**, a medical student who was awarded a Kohl Summer Scholarship.

Arina Nisanova was awarded the Medical Student Research Award from the Melanoma Research Foundation for her research entitled “Risk Factor Analysis of Young Patients with Uveal Melanoma Treated with Proton Beam Therapy.”

2023: Gary Novack, Ph.D., became a fellow of the Association for Research in Vision and Ophthalmology (ARVO) (FARVO).

January 2023: Glenn Yiu, M.D., Ph.D., was one of four UC Davis professors that were awarded UCOP grants to lead multicampus research projects and initiatives. Diabetic retinopathy, a complication that affects blood vessels in the eye, is the leading cause of blindness in adults. Early detection and treatment are critical to prevent vision loss. Yet, fewer than 50% of the 3.2 million Californians with diabetes

undergo recommended annual eye screening. Dr. Yiu received a \$2 million grant to lead an interdisciplinary program, the Collaborative UC Teleophthalmology Initiative (CUTI). The project is in partnership with medical centers at UC San Diego, UC San Francisco and UC Los Angeles. CUTI builds on a screening program Yiu launched at UC Davis Health in 2018. The goal is to expand eye care access for diabetics, particularly for underserved populations. The project will utilize digital medical equipment for teleophthalmology or “remote” ophthalmology.

March 2023: Congratulations to **Glenn Yiu, M.D., Ph.D.**, for receiving the UC Davis Academic Senate Distinguished Scholar Public Service Award. Members of this award are honored for their teaching, research, and public service. Dr. Yiu has energetically expanded access to ophthalmological services in underserved communities. He established and expanded a teleophthalmology program,

which has screened more than 2,500 patients. He co-directed the Paul Hom Asian Clinic to provide free eye care to the local Asian community, and he obtained funding to support eye screening at UC Davis Health’s student-run community clinics. Dr. Yiu has partnered with CommuniCare Health Centers to provide remote eye grading, and he has negotiated with Noridian, California’s Medicare contractor, to promote insurance coverage for teleretinal imaging. He has also lobbied policymakers to address barriers to remote eye screening.

May 2023: Parisa Emami, M.D., M.P.H., was awarded the Knights Templar Eye Foundation Starter Grant for \$90,000 for Pediatric Uveitis Imaging Research for her research entitled: Non-Invasive and Quantitative Imaging Biomarkers for Pediatric Uveitis. Uveitis, an inflammation of the eye, is a major cause of visual impairment and blindness in children. Accurate and prompt diagnosis, treatment, and frequent monitoring are necessary to prevent

permanent damage and vision loss. Posterior inflammation (inflammation in the back of the eye) is the more common type of uveitis in children and is associated with worse visual outcomes, but diagnosis is often delayed due to lack of non-invasive, accessible imaging options for younger children. Currently, fluorescein angiography (FA) is the only imaging modality available for diagnosis of posterior inflammation, but it is invasive, lengthy, and difficult to perform particularly in children. Optical coherence tomography (OCT) and OCT angiography (OCTA) are fast, non-invasive, and can be performed in young children; however, it is currently unknown if they can be used to accurately diagnose and monitor uveitis in children. This project aims to generate quantitative and objective measures of disease activity based on OCT and OCTA findings for use in clinical practice and research. This will lead to improved screening, monitoring, and treatment of inflammation in children, resulting in better long-term vision outcomes and preventing vision loss.

July 2023: The Jack McGovern Coats' Disease Foundation Research Grant was awarded to **Dr. Glenn Yiu** for his research on "cellular and molecular profiling to improve the precision of anti-angiogenesis therapies for AMD."

July 2023: Congratulations to **Parisa Emami, M.D., M.P.H.**, for being awarded the American

Society of Retina Specialists Honors Award (ASRS). This award recognizes ASRS members for their time and contributions to the scientific programs of the Annual Meeting.

July 2023: Glenn Yiu, M.D., Ph.D., was awarded an Agriculture & Food Research Initiative Grant from the USDA for his research entitled "Effects of goji berry intake on risk of age-related macular degeneration: A randomized clinical trial."

September 2023: The Retina Society presented **Dr. Glenn Yiu** with the Research Award for his research on "Photoreceptor Reprogramming in an Optogenetic Model of Geographic Atrophy."



Dr. Mark Mannis receiving the Walk of Fame star from the Eye Hospital of Sorocaba.

September 2023: Allison Liu, M.D., Ph.D., was awarded a Faculty Fellows Scholarship from the UC Davis Office of Public Scholarship and Engagement for her project "Translating clinical research

studies and clinical practice experiences into publications in academic journals and materials for public audiences.

October 2023: Gary Novack, Ph.D., was selected by the American Academy of Ophthalmology to be interviewed for a podcast on Infections from Artificial Tears. Visit <https://www.aaojournal.org/audio-do/infections-artificial-tears> to listen to the podcast.

November 2023: Mark Mannis, M.D., F.A.C.S., professor and chair of the Department of Ophthalmology & Vision Science, has been honored by the Eye Hospital of Sorocaba near São Paulo, Brazil, for his work in ophthalmology. The hospital recognized Dr. Mannis' work with a star on its Walk

of Fame. The hospital's Walk of Fame is modeled after the stars that adorn Hollywood Boulevard in Los Angeles, honoring physicians who have made significant contributions to global efforts around

ophthalmology. Dr. Mannis is a world-renowned expert in the diagnosis and treatment of external eye disease and diseases of the cornea. He specializes in medical and surgical management of these problems, including various types of corneal transplantation for all forms of corneal disease. The Eye Hospital of Sorocaba is one of the busiest eye banks and departments of ophthalmology in the world. The hospital paid tribute to Dr. Mannis during a special ceremony at a conference on October 20 during which he presented a keynote lecture on diseases of the skin and eye, while also delivering three additional presentations. “Being given a star on the Ophthalmology Walk of Fame is an honor accorded to very few, and I am deeply honored by this recognition,” Dr. Mannis said.



From Left to Right: Dr. Brooke Change, Dr. Hai Tong, and Dr. Marcia Nearing.

March 2024: Congratulations to **Dr. Chang, Dr. Tong and Dr. Nearing** on receiving their 15+ year pins! We are so grateful for their dedication to our patients and the Department of Ophthalmology & Vision Science.

to recognize early-career researchers who have exhibited excellence in research that has led to — or has the promise of leading to — clinical applications. Dr. Yiu received the award May 5 at the 2024 ARVO Annual Meeting in Seattle, Washington.

May 2024: Yin Allison Liu, M.D., Ph.D., along with Oanh Meyer and David Bissig, are the recipients of a 2024 Public Impact Research Initiative (PIRI) Grant from the UC Davis Office of Public Scholarship and Engagement. The grant will help the team implement



ARVO Foundation Chair Joel S. Schuman, left, and Dr. Glenn Yiu, professor of ophthalmology at UC Davis Health.

May 2024: Glenn Yiu, M.D., Ph.D., professor in retina in the Department of Ophthalmology & Vision Science, has been honored by the Association for Research in Vision and Ophthalmology (ARVO) with the 2024 Carl Camras Translational Research Award. The \$12,000 award is granted to investigators working in translational research that can lead to real-world results and improved human health. The intent of the award is

a tele-eye care program for individuals with cognitive impairments, demonstrating the potential of technology in bridging healthcare disparities. Their partners include Olleyes, Inc., Alzheimer’s Association Northern California and Northern Nevada Chapter, Sacramento County Health Center. •

EVENTS UPDATES

Dr. Mark Mannis presenting Dr. Esther Kim with the Alumnus of the Year award.



June 2023: The UC Davis Eye Center hosted the annual Resident & Fellow Research Symposium at the Hilton Sacramento Arden West hotel where 3rd and 4th year Residents and Fellows presented their ophthalmology research projects to ophthalmologists and members of the community. During the program, Dr. Esther Kim was presented with the Alumnus of the Year award.

September 2023: 2023 J. William Kohl, M.D. Summer Scholars — Thanks to the ongoing support of Ann Kohl, the J. William Kohl Summer Scholarship for medical students continues to be an essential source of inspiration and hope in UC Davis Eye Center's endeavor to promote young scholars in

ophthalmology. This program was inspired by Ann's late husband, Bill Kohl, M.D., who was one of the founding members of the UC Davis Department of Ophthalmology & Vision Science, as well as a champion for encouraging medical students to pursue ophthalmology as a specialty.

Medical students from across the United States reached out with interest in the scholarship, having heard from educators and peers about this unique opportunity. The UC Davis faculty responded enthusiastically, with new mentors offering an array of projects. UC Davis had its largest group of applicants for the 2023 cycle and was able to extend an invitation to eight young researchers. This opportunity provides a



From Left to Right: Jack Hagler, Mrs. Ann Kohl, and Elizabeth Kohl Hagler.

In September 2023, we hosted the presentations in the new Robert B. Miller Conference & Education Center in the Ernest E. Tschannen Eye Institute building. We had a record number of medical students attend the presentations in hopes of learning more about the scholarship. We received a record number of applications from medical students for the 2024 summer program. Community ophthalmologists were invited to discuss their experience with their careers in ophthalmology with the medical students. Thank you to the Kohl family for their continued support in this wonderful program!

November 2023: The Department of Ophthalmology & Vision Science hosted the annual Alumni & Volunteer Clinical Faculty & Friends Reception at the American Academy of Ophthalmology in San Francisco, California. We look forward to hosting our alumni, VCF, and friends at this year's reception, which will be held at The Westin Chicago River North in Chicago, Illinois, on Saturday, October 19, 2024.



From Left to Right: Jonathan Ruiz, Medical Student and Giovanni Moreno, Medical Student

stipend of \$2,500 for medical students undertaking mentored research in the vision sciences. Associated with this program is the J. William Kohl, M.D. Research Travel Grant, which consists of a \$1,200 stipend per student. The grant is intended to defray the cost of presenting summer research at national ophthalmology conferences and meetings.



Left to Right: Taylor Ngo, Medical Student, Mrs. Ann Kohl, and Manuela Herrera, Medical Student.

Past and present participants have moved forward with applications to ophthalmology residency, and two previous Kohl summer scholars started their first year of residency at UC Davis Eye Center in July 2023. Being a recipient of this scholarship is a pivotal accomplishment that helps students stand apart from other candidates. It has helped ignite continued interest in vision research in these future ophthalmologists, who will contribute to the advancement of the field for years to come.



From Left to Right: Michele Lim, M.D., Jonathan Hernandez, M.D., Sangeeta Kalsi, M.D., Michael Yen, M.D. and Blake Snyder, M.D., at the AAO Alumni Reception.



From Left to Right: Samuel Feldman, M.D., Manpreet Tiwana, M.D., Pelin Celiker, M.D., and Ketaki Panse, M.D., at the AAO Alumni Reception.



From Left to Right: Robert Miller, M.D., Bradley Sandler, M.D., Esther Kim, M.D., Richard Bernheimer, M.D., and Bonnie Quiroz, M.D., at the AAO Alumni Reception.



From Left to Right: Luis Izquierdo, Jr., M.D., Ph.D., Maria Henriquez, M.D., Ph.D., Mark Mannis, M.D., F.A.C.S., Enrique Graue-Hernandez, M.D., MSc, and Denise Loya Garcia, M.D., Ph.D., at the AAO Alumni Reception.

January 2024: Congratulations to **Paul FitzGerald, Ph.D.** (center) who received the inaugural Center for Vision Sciences Legend Award at the annual vision symposium on January 5, 2024. The award

March 2024: Dr. James Brandt presented the AGS Keynote Lecture at the Annual Meeting of the American Glaucoma Society (AGS) held in Huntington Beach, California. Dr. Michele Lim was the program chair.



From Left to Right: Dr. Edward Pugh, Dr. Paul FitzGerald, and Dr. John Keltner.



UC Davis Glaucoma Service from Left to Right: Dr. Michele Lim, Dr. James Brandt, and Dr. Rebecca Chen.

was presented by Dr. Edward Pugh (left), who detailed Paul's scientific, academic, and leadership accomplishments over his 40-year career at UC Davis. Dr. FitzGerald will join other emeritus faculty, like Ophthalmology's Dr. John Keltner (right), in July when he steps down as chair and retires. We will miss you, Paul!



Dr. James Brandt

April 2024: Congratulations to **Jeffrey Caspar, M.D., Rebecca Chen, M.D., Benjamin Jastrzembski, M.D., Ala Moshiri, M.D., and Kareem Moussa, M.D.** for receiving Diamond Doc Awards for their patient care in the third quarter of FY 24. 170 UC Davis Health physicians were awarded this award, which celebrates physicians who demonstrated careful listening, clear explanations, and respectful partnerships by receiving 90th percentile or higher scores on patient surveys. •

RESIDENT PROFILES

We sat down to talk with some of our residents to learn more about where they have come from and why they chose to go to the UC Davis Eye Center for their Ophthalmology residency.



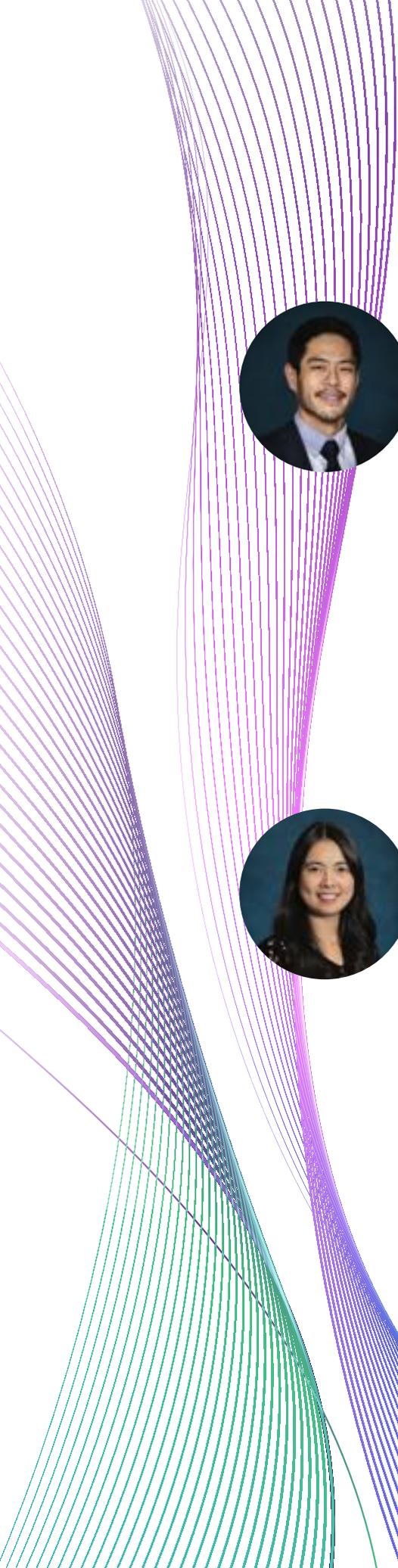
Abraham Hang, M.D., Class of 2025, is a third-year resident in the Department of Ophthalmology at UC Davis Eye Center. He attended his undergrad at the University of California, Berkeley and went on to medical school at Temple University. He chose to do his residency in ophthalmology because of the ability to impact the lives of patients, often immediately, through medicine and surgery. All the technological, medical, and surgical advancements make ophthalmology an exciting field to him. He chose to come to UC Davis Eye Center for his residency because of the strong surgical and clinical training program, as well as excellent faculty here who have mentored him during his residency. “Being from California, this program was close to my family and support network as well.”



Manpreet Tiwana, M.D., Class of 2025, is a third-year resident in the Department of Ophthalmology at UC Davis Eye Center. He attended University of California, Berkeley for his undergraduate studies. He then attended the University of Illinois, Chicago for his medical school training. The reason he chose to go into Ophthalmology residency is because sight is what most people would say is our most valuable sense. It is a field where the physical exam is so important, and being able to see the pathology, and having options to treat patients has been very fulfilling to him. He loved the idea of being able to do very precise surgery, along with having a clinic where he could perform laser procedures or injections that would help our patients see better. “Even though my residency interview was held virtually during the pandemic, the reason I chose UC Davis Eye Center for my residency was because of the warmth everyone showed me. The faculty, co-residents, and staff have all been so welcoming, patient, and loving.” He stated the faculty are great teachers and extremely knowledgeable and that the environment has been amazing.



John Mark, M.D., Class of 2026, is a second-year resident in the Department of Ophthalmology at UC Davis Eye Center. He attended the University of California, Davis for his undergraduate studies and went to medical school at the UC Davis School of Medicine. He chose to do his residency in Ophthalmology because he always wanted to perform surgery. He found that “the ophthalmologists that he interacted with were welcoming, they actually smiled, and most had a life outside of the OR!” He feels the reason that ophthalmologists are generally happy is because the field is impactful for the patients, and we can make huge improvements in the quality of their lives with



simple interventions. Having grown up in Sacramento and graduated from UC Davis for undergrad and medical school, he said it was a “no-brainer” to choose the residency program at the UC Davis Eye Center. He loves this city and the people who make it run. Being able to be a part of this community’s involvement means a lot to him. He stated “luckily for me, the residency program here in my backyard is full of world-class teachers. I chose to stay because I am confident this program will help me become a competent and confident physician for my community.”



Andy Shao, M.D., Class of 2026, is a second-year resident in the Department of Ophthalmology at UC Davis Eye Center. He attended University of Nevada, Reno for his undergrad and medical school. He chose to do his residency in Ophthalmology, because between the constantly shifting technological advances and the technically challenging procedures, he found Ophthalmology to be a field that he could see himself contributing to for a professional lifetime. He feels cataract surgery is one of the most rewarding procedures he has come across during his medical training. “Though I’ve only just started my training, I’m excited to expand my technical skillset and knowledge base in the coming years!” He stated he knew UC Davis Department of Ophthalmology could offer him the robust surgical training that he wanted from a residency. With the wide range of pathology and comprehensive education he has received from the supportive faculty, he feels he will be comfortable with many professional options. “I really enjoyed the research year I spent here and look forward to continuing research studies while in residency.”



Christine Xu, M.D., Class of 2026, is a second-year resident in the Department of Ophthalmology at UC Davis Eye Center. She attended Yale University for her undergraduate studies and went to medical school at Harvard University. She chose to do her residency in Ophthalmology because she appreciated the balance of medical and surgical aspects. As someone who loves music and has always been involved in music throughout her life, she appreciated how there are connections between music and the mental discipline and practice needed for surgery. She chose to go into the residency program at the UC Davis Eye Center because she wanted to train somewhere with high patient and surgical volume. She wanted the opportunity to see a broad range of cases so that she would leave residency feeling comfortable with whatever comes through the door. •

LEADERSHIP



Mark J. Mannis, M.D., F.A.C.S.
Natalie Fosse Endowed Chair in
Vision Science Research
Chairman
Distinguished Professor of Ophthalmology
Cornea and External Disease



Michele C. Lim, M.D.
Vice Chair and Medical
Director
Professor, Glaucoma



James D. Brandt, M.D.
Daryl and Opal Geweke
Endowed Chair in Glaucoma
Vice Chair of International
Programs & New Technology
Professor, Glaucoma
Director, Glaucoma Service
Director, Glaucoma Fellowship



Gary D. Novack, Ph.D.
Vice Chair of Collaborative
Research
Professor



Paul A. Sieving, M.D., Ph.D.
Neil and MJ Kelly Presidential Chair in
Vitreo-retinal Science
Distinguished Professor
Research Director
Center for Ocular Regenerative Therapy
Retinal and Macular Dystrophy



Nandini G. Gandhi, M.D.
Byron Demorest Endowed Chair
in Pediatric Ophthalmology
Director, Residency Program
Professor, Pediatric Ophthalmology
and Adult Strabismus
Director, Pediatric Ophthalmology
and Adult Strabismus

CLINICAL FACULTY



Jeffrey J. Caspar, M.D.
Director, Cataract and
Refractive Surgery
Professor, Comprehensive
Ophthalmology and Refractive Surgery



Rebecca Chen, M.D.
Assistant Professor, Glaucoma



Parisa Emami, M.D., M.P.H.
Director, Ocular Inflammation and Uveitis
Assistant Professor, Retina
Assistant Professor, Ocular
Inflammation and Uveitis



Marcela M. Estrada, M.D.
Assistant Professor, Pediatric
Ophthalmology and
Adult Strabismus

CLINICAL FACULTY, CONTINUED



Benjamin Jastrzembki, M.D.
Pediatric Ophthalmologist



John L. Keltner, M.D.
Chair Emeritus
Distinguished Professor/Emeritus,
Neuro-Ophthalmology



Esther S. Kim, M.D.
Director, Comprehensive and
Optometric Services
Professor, Comprehensive
Ophthalmology and
Ophthalmic Pathology



Jennifer Li, M.D.
Director, Cornea and External
Disease Service
Professor,
Cornea, External Disease and
Refractive Surgery



Lily K. Lin, M.D., F.A.C.S.
Director, Surgical Services
Professor, Ophthalmic Plastic
and Orbital Surgery



Y. Allison Liu, M.D., Ph.D.
Associate Professor, Ophthalmology,
Neuro-Ophthalmology and Neurological
Surgery



Jeffrey H. Ma, M.D.
Comprehensive Ophthalmology
Ocular Surface Disease
Assistant Professor, Comprehensive
Ophthalmology and Ocular Surface Disease
Director, Medical Student Education
Director, Optometric Services



Ala Moshiri, M.D., Ph.D.
Professor, Retina and
Vitreoretinal Surgery



Kareem Moussa, M.D.
Assistant Professor, Vitreoretinal
Surgery, Ocular Inflammation
and Uveitis



Susanna S. Park, M.D., Ph.D.
Barbara A. & Alan M. Roth, M.D.,
Endowed Chair
in Discovery, Education and Patient
Care in Vision Science
Director, Retina Fellowship
Professor, Retina



Ivan R. Schwab, M.D.
Professor Emeritus
Cornea, External Disease, and Uveitis



Glenn Yiu, M.D., Ph.D.
Professor,
Retina
Director, Tele Medicine

SCHOOL OF MEDICINE LEADERSHIP



Cameron Blount
Chief Administrative Officer



Jennifer Harter
Ambulatory Care
Administration Manager

VETERANS AFFAIRS NORTHERN CALIFORNIA HEALTH CARE SYSTEM



Harinder S. Chahal, M.D.
Oculofacial Plastic Reconstructive
Surgery
Sacramento Valley Division



David Chu, M.D.
Interim Chief, Eye Care Services
Veterans Affairs
Comprehensive and
Cataract Surgery
Veterans Affairs,
East Bay Division



Parisa Emami, M.D., M.P.H.
Director, Ocular Inflammation
and Uveitis
Assistant Professor, Retina,
Ocular Inflammation and Uveitis



Vivian Lien, M.D.
Cornea
Veterans Affairs,
Sacramento Valley Division



Tiffany Wong, M.D.
Comprehensive and Cataract
Surgery
Veterans Affairs, Sacramento
Valley Division



Michael Yen, M.D.
Comprehensive and Cataract Surgery
Veterans Affairs, East Bay Division



Yue (Carrie) Zhao, M.D.
Glaucoma
Veterans Affairs, East Bay Division

OPTOMETRISTS



Brooke S. Chang, O.D.
Optometrist



Lauren Guajardo, O.D.
Optometrist



Heidi Miller, O.D., F.A.A.O., F.S.L.S.
Optometrist



Marcia Nearing, O.D., F.A.A.O.
Optometrist



Larisa Johnson Tong, O.D., F.A.A.O.
Optometrist



Kaaryn Pederson-Vanbuskirk,
O.D., F.A.A.O.
Optometry Department Manager



Jenny Truong, O.D.
Optometrist



Hai Tong, O.D.
Optometrist



Tina Zeng, O.D.
Optometrist

ORTHOPTIST



Tania Usner, B. Med. Sci.
Orthoptist

VISION SCIENTISTS



Marie E. Burns, Ph.D.
Professor, Retinal Physiology
Research Interests:
Photo transduction,
photoreceptor adaptation, and
protein movement



Mark S. Goldman, Ph.D.
Professor,
Neuroscience
Research Interests:
Computer models of eye movement



Brian Leonard, DVM
Associate Professor
Comparative Ophthalmology



Zeljka Smit-McBride, Ph.D.
Adjunct Professor
Vitreoretinal Research Lab
Research Interests:
Genomics and epigenetics of aging
and age-related eye diseases,
age-related macular degeneration
and diabetic retinopathy



Edward N. Pugh, Jr., Ph.D.
Distinguished Professor, Cell Biology and
Human Anatomy, Physiology &
Membrane Biology,
Ophthalmology
Research Interests:
Retinal photoreceptors and color vision



Charles E. Thirkill, Ph.D.
Adjunct Professor Emeritus,
Immunology & Biology
Research Interests:
Ocular immunology



John S. Werner, Ph.D.
Distinguished Professor Emeritus,
Visual Psychophysics
Research Interests:
Color and spatial vision, normal
aging and age-related disease,
retinal and optic nerve imaging



Min Zhao, M.D., Ph.D.
Professor, Ophthalmology and Dermatology,
Institute for Regenerative Cures
Research Interests:
Electrically stimulating cell
migration in corneal wound
healing and neuron regeneration



Paul FitzGerald, Ph.D.
Professor, Cell Biology
and Human Anatomy
Director, Center for Vision Science
Research Interests:
The role of intermediate filaments in
the biology of the ocular lenses



Ravi S. Jonnal, Ph.D.
Associate Professor
Research Interests:
Retinal imaging, adaptive optics,
optical coherence tomography



Nicholas Marsh-Armstrong, Ph.D.
Daryl and Opal Geweke Endowed
Chair in Glaucoma Research
Research Interests:
Basic cellular, molecular and
developmental biology of retinal
ganglion cells relevant to glaucoma



Gary D. Novack, Ph.D.
Vice Chair for Collaborative Research
Pharmacology and Ophthalmology
Research Interests:
Development of new therapeutics,
patient adherence and performance,
regulatory affairs



Paul A. Sieving, M.D., Ph.D.
Neil and MJ Kelly Presidential Chair in
Vitreoretinal Science
Distinguished Professor
Research Director
Center for Ocular Regenerative Therapy
Retinal and Macular Dystrophy

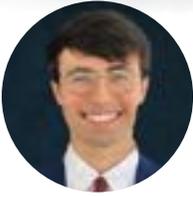


Sara Thomasy, D.V.M., Ph.D., D.A.C.V.O.
Professor of Comparative Ophthalmology
Research Interests: Corneal wound
healing, glaucoma, ocular pharmacology,
antiviral therapy for FHV-1, large animal
models of ophthalmic disease



Robert J. Zawadzki, Ph.D.
Professor,
Advanced Retinal Imaging

FELLOWS



Samuel Feldman, M.D.
Clinical Retina Fellow 2024



Christopher Langlo, M.D., Ph.D.
Clinical Retina Fellow 2024



Jennifer P. Tingley, M.D.
Clinical Retina Fellow 2025



Sina Vahedi, M.D.
Clinical Glaucoma Fellow 2024



Nitin Chopra, M.D., M.B.A.
Clinical Cornea Fellow 2024

RESIDENTS



Denis Huang, M.D.
Fourth Year Resident 2024



Matthew Javitt, M.D.
Fourth Year Resident 2024



Andrew Nelson, M.D.
Fourth Year Resident 2024



Blake Snyder, M.D.
Fourth Year Resident 2024



Abraham Hang, M.D.
Third Year Resident 2025



Joo Yeon Jung, M.D.
Third Year Resident 2025



Ketaki Pansé, M.D.
Third Year Resident 2025



Manpreet Tiwana, M.D.
Third Year Resident 2025



Pelin Celiker, M.D.
Second Year Resident 2026



John Mark, M.D.
Second Year Resident 2026



Andy Shao, M.D.
Second Year Resident 2026



Christine Xu, M.D.
Second Year Resident 2026



Neda Dastgheyb, M.D.
First Year Resident 2027



Christopher Kaler, M.D.
First Year Resident 2027



Michael Nguyen, M.D.
First Year Resident 2027



Alexander Rusakevich, M.D.
First Year Resident 2027

VOLUNTEER CLINICAL FACULTY



Barbara Arnold, M.D.

Clinical Professor

Robert Bellinoff, M.D.

Clinical Instructor

Craig Berris, M.D.

Clinical Professor, Emeritus

John Canzano, M.D.

Associate Clinical Professor

Harinder Chahal, M.D.

Assistant Clinical Professor

David Chu, M.D.

Assistant Clinical Professor

Charles Cooper, M.D.

Clinical Professor

Joseph Giovannini, M.D.

Clinical Instructor

Tyrone Glover, M.D.

Clinical Professor

J. Christopher Hartley, M.D.

Clinical Associate

Sukhjot Johl, M.D.

Assistant Clinical Professor

Daniel King, M.D.

Clinical Professor

David Kira, M.D.

Clinical Instructor

Daniel Lee, M.D.

Associate Clinical Professor

Samuel Lee, M.D.

Clinical Instructor

Vivian Lien, M.D.

Assistant Clinical Professor

Jennifer Long, M.D.

Clinical Instructor

Michael Merkle, M.D.

Clinical Instructor

Robert Miller, M.D.

Clinical Professor

Gary Novack, Ph.D.

Clinical Professor

Sang Oh, M.D.

Assistant Clinical Professor

Jonathan Perlman, M.D.

Associate Clinical Professor

James Ruben, M.D.

Clinical Professor

Bradley Sandler, M.D.

Assistant Clinical Professor

Denise Satterfield, M.D.

Clinical Professor

Francis Sousa, M.D.

Clinical Professor

David Telander, M.D., Ph.D.

Clinical Instructor

Tiffany Wong, M.D.

Assistant Clinical Professor

Michael Yen, M.D.

Assistant Clinical Professor

FACULTY RETIREMENTS

It is with mixed emotions that we announce the retirement of one of our long-standing faculty members from the UC Davis Eye Center.



Linda Margulies, M.D.

On August 24, 2023, we celebrated the accomplishments and retirement of Dr. Linda Margulies after 35 years of service to the Department of Ophthalmology & Vision Science. Dr. Margulies attended the University of California, Davis, from 1972 to 1976 and received her Bachelor of Science degree in Biochemistry. In 1981, she received her medical degree from George Washington University, School of Medicine in Washington, D.C., where she completed an internship in Internal Medicine. From 1982 to 1985, she completed her residency training in ophthalmology at the University of California, Davis. From 1986-1987, she completed her fellowship in Retinal and Vitreous Surgery from the Washington University at St. Louis, Barnes Hospital in St. Louis, Missouri. She became the chief of Ophthalmology and Eye Care Services at the Veterans Affairs Northern California Health Care System in 1985 and joined the faculty in the Department of Ophthalmology & Vision Science at UC Davis Eye Center in 1988. We wish Dr. Margulies enjoys retirement!



Linda Margulies with past Residents of the UC Davis Eye Center

FACULTY ANNOUNCEMENTS



Ravi Jonnal, Ph.D.

Congratulations to Ravi Jonnal, Ph. D., who was recently promoted to associate professor. Dr. Jonnal studies retinal neurons and develops methods to observe the anatomy and physiology of these cells in the living human eye. The tools developed in his lab have the potential to dramatically improve the diagnosis of retinal disease and accelerate the development of therapeutic interventions. His research interests include developing techniques for measuring light-evoked functional responses in retinal neurons.

Dr. Jonnal attended Deep Springs College in Deep Springs, California, for his undergraduate degree in liberal arts in 1993. In 1995, he received his Bachelor of Science degree in neurobiology and behavior from Cornell University in Ithaca, New York. He received his Ph.D. in 2011 in vision science and cognitive science from Indiana University in Bloomington, Indiana.



Y. Allison Liu, M.D., Ph.D.

Congratulations to Y. Allison Liu, M.D., Ph.D., who was recently promoted to associate professor in ophthalmology, neuro-ophthalmology, and neurosurgery.

Dr. Liu is a neuro-ophthalmologist offering care to adults and children with neurological conditions that affect vision. Dr. Liu's research focuses on using the eye as a window to the brain. By applying novel ophthalmic imaging technologies, Dr. Liu strives to establish biomarkers for disease activity monitoring and visual outcome prediction in several neuro-ophthalmic conditions, such as giant cell arteritis, brain tumors, and skull base conditions.

Dr. Liu received her medical degree in 2012 from Shanghai Jiaotong University in Shanghai, China. She also received her Ph.D. from UCLA in Los Angeles, California, in 2012. From 2013 to 2015, she completed her internship in Pediatrics at Loma Linda University in Loma Linda, California. While at Loma Linda University, she completed her residency training in neurology and child neurology from 2015 to 2018. Dr. Liu then completed her fellowship in neuro-ophthalmology at Stanford University in Stanford, California, from 2018 to 2019.



Glenn Yiu, M.D., Ph.D.

Congratulations to Glenn Yiu, M.D., Ph.D., who was recently promoted to professor in retina. Dr. Yiu is a board-certified vitreoretinal specialist and surgeon at the UC Davis Eye Center. He received his medical training at Harvard Medical School, where his graduate research explored mechanisms of nervous system regeneration and earned him a dual M.D.-Ph.D. degree. After residency at Harvard, he underwent a vitreoretinal surgery fellowship at Duke University, where he also became involved in ocular imaging research to study age-related macular degeneration (AMD) and diabetic retinopathy. As a vitreoretinal specialist and surgeon at UC Davis, he specializes in both the medical and surgical management of various retinal diseases, including macular degeneration, diabetic retinopathy, retinal vascular conditions, retinal detachments, and macular diseases such as epiretinal membranes and macular holes. He is also a federally-funded clinician-scientist with expertise in AMD, diabetic retinopathy, gene therapy, ocular imaging, and telemedicine.

Dr. Yiu is involved in translational research to study the pathogenesis and develop therapies for age-related macular degeneration (AMD) and other retinal diseases, with focuses on gene therapy, ocular imaging technologies, and animal models of retinal disease. He reported the first use of CRISPR-based genome editing as a treatment strategy for wet AMD, discovered the use of microneedles for suprachoroidal viral injections for gene delivery, and pioneered important studies on drusen evolution in rhesus monkeys. He also employs ocular imaging technologies to develop an optically-triggered animal model of geographic atrophy, and study vascular roles in retinal diseases. He currently serves as director of the UC Davis Reading Center and Director of Tele-ophthalmology, where he has pioneered a tele-retinal screening program to expand eye screening among diabetic patients in Northern California. His translational research program spans animal models from mice to non-human primates to human patients, and

he is actively involved in major national clinical trials for new treatments for AMD and other retinal diseases. He has published numerous peer-reviewed scientific papers and book chapters, and has given lectures nationally and internationally. He is the editor of the textbook “Vitreoretinal Disorders”, serves as editor and reviewer for several academic journals, and is a course lecturer at the American Academy of Ophthalmology.

Dr. Yiu received his B.A. from Columbia University in New York, New York in 2000. He then attended medical school and received his M.D. in 2008 from Harvard Medical School in Boston, Massachusetts. He received his Ph.D. in neuroscience, Harvard Medical School in 2006 before completing an internship in medicine at the Brigham & Women’s Hospital in Boston, Massachusetts from 2008-2009. From 2009-2012, Dr. Yiu completed his residency in ophthalmology at the Massachusetts Eye & Ear Infirmary, at Harvard Medical School. From 2012-2014, he completed his fellowship in vitreoretinal surgery from Duke University Medical Center in Durham, North Carolina.



Robert J. Zawadzki, Ph.D.

Congratulations to Robert J. Zawadzki, Ph.D., who was recently promoted to professor. Dr. Zawadzki is studying various types of retinal and ONH diseases. His research interests focus on development of new instrumentation for high-resolution in vivo retina imaging (allowing visualization of individual cellular structures). This includes but is not limited to, Optical Coherence Tomography (OCT), Scanning Laser Ophthalmoscopy (SLO), Adaptive Optics (AO), and combinations of all the above. Currently, Dr. Zawadzki is also involved in studying eye aging process as well as various types of retinal diseases by using these novel instruments to enhance the understanding of its mechanisms. Dr. Zawadzki has a broad background in biomedical optics, biomedical engineering, and vision science. He is currently developing several novel in vivo retinal imaging modalities to study structural and functional changes of the retina over time at cellular resolution. These include several multimodal (combined OCT and fluorescence SLO) adaptive optics-enhanced clinical and basic science retinal imaging systems. Additionally, he has experience in the development and application of early generation of OCT handheld-based retinal imaging systems for clinical investigations in the pediatric population. He is also involved in the development of novel image acquisition and data processing schemes that help to quantify structural and functional changes in the retina in response to normal aging, disease progression as well as therapy. As an example, one of the new functional retinal tests developed at UCD, so-called optoretinography (ORG), focuses on measuring light-evoked optophysiology signals from photoreceptors using OCT. We choose term ORG to show similarities to ERG (electroretinogram), which has long been used to assess retinal function in vivo.

He received his B.S. in experimental physics at Nicolaus Copernicus University in Torun, Poland in 1998. In 2000, he received his M.S. in medical physics from the Nicolaus Copernicus University in Torun, Poland. Dr. Zawadzki received his Ph.D. in natural sciences from the Technical University of Vienna in Vienna, Austria, in 2003.

See the difference you can make



The mission of the UC Davis Eye Center is to provide the highest possible quality of patient care, to conduct pioneering research on the visual system and its disorders, and to train residents, medical students, practicing physicians, allied health personnel, and fellows for outstanding careers in either academic or clinical practice. We welcome gifts that support this mission.

To learn more about how to give to the UC Davis Eye Center, contact Sheena Summers at 916-878-9924 or email smlennie@ucdavis.edu today!

Donate today at
<https://health.ucdavis.edu/eyecenter/giving/index.html>

In Memoriam

This year, UC Davis Eye Center lost several dear friends whose vision, dedication, and generosity will always be remembered.



DAVID H. WARREN

MAY 27, 1930 – APRIL 12, 2023

David H. Warren was a beloved husband, teacher, scholar, and Renaissance man. With his passing, the Sacramento area has lost an incredible educational and community treasure. He was born in Paducah, Kentucky, on May 27, 1930. He earned his master's and doctorate degrees at the Pontifical North American College Seminary in Rome, Italy. He was mentored by Archbishop Montini, who eventually became a cardinal and, ultimately, Pope Paul VI. David was ordained a Roman Catholic priest at the Vatican in 1955. David served as a priest for five years in Henderson, Kentucky, where he was the superintendent of a Kentucky Catholic School District. Then, he became a parish priest in Whitesville, Kentucky. David developed a strong

desire to help people in need, regardless of their background.

In 1967, David left the priesthood, moved to Sacramento, and found a job teaching in a junior high. In 1969, he was hired by Sacramento City College to teach humanities classes and eventually became chairman of that department. It is estimated that David taught over 78,000 students during his tenure at SCC. David was always concerned about his students, especially those in financial need. He solicited financial support for these students and often personally helped them without any public recognition. David and his wife, Lois, then established the SCC David and Lois Warren Scholarship. David met the love of his life, Lois Franke, in Florence, Italy, in 1970, and they married in 1971.

Always true to his incredibly generous nature and thoughtful spirit, David left a legacy gift to the University of California, Davis Eye Center, and donated his body to the University of California, Davis Medical School for research. He was a very generous supporter of research at the Eye Center and a dear friend to many. •

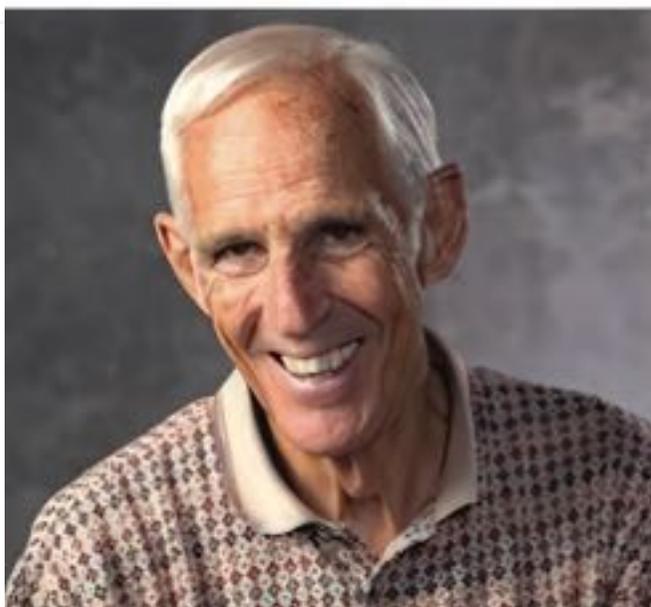
“The purpose of life is not to be happy. It is to be useful, to be honorable, to be compassionate, to have it make some difference that you have lived and lived well.”

- RALPH WALDO EMERSON

JIM STRENG

MAY 16, 1930 - JUNE 1, 2023

Jim Streng was a long-time Sacramento resident, retired home builder, and Sacramento County Supervisor. Jim passed away peacefully at home with family at the age of 93. Jim was born May 16, 1930, in Scranton, Pennsylvania. He was educated at Scranton Central High School & Dartmouth College and was a Sergeant in the U.S. Army, serving in South Korea during the Korean War. After completing his military service and education at Dartmouth, Jim and his brother Bill started Streng Bros. At first, they built conventional ranch homes like their uncle.



They later began building Contemporary (Mid-Century Modern) homes. Over the course of the next 2 1/2 decades, they built over 3,800 homes in Sacramento and Yolo counties.

While still building, Jim served as the Sacramento County zoning administrator and as a planning commissioner. Jim was dedicated to improving our community and working on many bipartisan issues, which earned him the respect and admiration of his colleagues and community members. Jim Streng always tried to do the right thing.

Not only are Jim and Mary Jo very generous supporters of the Eye Center, but both served as members of the University of California, Davis Eye Center Executive Advisory Council Board for many years, helping to shape the Eye Center into what it is today.

Those who were fortunate enough to know Jim Streng remember him as a straight-talking, down-to-earth, incredibly kind man who was genuinely interested in everyone he met. He will be forever missed. •

“Jim Streng always tried to do the right thing.”



HOLLAND ROSE LATTIN

NOVEMBER 24, 1981 - JUNE 30, 2023



Holland Rose Lattin

was a beautiful soul, wife, mother, daughter, sister, aunt, and friend. Holland will be forever loved and cherished by the hearts she touched. Holland's giving heart would insist on helping anyone who would accept her generosity.

She also enjoyed a career here at the UC Davis Eye Center. She worked in the Development department, which included estate and gift planning. She thoroughly enjoyed working directly with the donors and participating in event planning. Holland is survived by her husband, Christopher Michael Lattin, as well as her two sons, Cruz Patrick Lattin (age 12) and Maverick Michael Lattin (age 9). She will be greatly missed. •

“Holland will be forever loved and cherished by the hearts she touched.”



DARYL GEWEKE

JANUARY 31, 1925 - DECEMBER 8, 2023

Daryl Geweke, of Lodi, California, passed peacefully at home on December 8, 2023. Daryl William Geweke was born in Pawnee City, Nebraska.

After serving for three and a half years in WWII, he returned to Nebraska. Through hard work and natural organizational skills, he managed to double the size of his family farm. Then Daryl began to follow his childhood dream and started a used car sales company. As the market rapidly changed, Daryl realized that new cars were more stable, and he took a position with Eagle Ford.

In 1965, a Ford franchise became available in Lodi, and his vision of being a new car dealer was soon realized. He built a new Ford store in Lodi, California, in 1973. Shortly after this, he started opening other marques like Dodge, Jeep, Kia, and Toyota. He added the Geweke Paint, Body & Tow, and Geweke Ford RV (one of the largest in the Valley) to the portfolio. From his success, Daryl started to branch out into real estate ventures and quickly amassed a collection of apartments and retail properties. In 1989, he jumped into the hospitality business and built the Holiday Inn Express on Cherokee Lane



and, ultimately, eight other hotels in the Northern Central Valley.

All this success never affected his deep sense of faith and family. He was known for treating his employees like family, and many worked for him for decades because of that kindness. He loved to help others grow and was always willing to take the time to share his knowledge. Daryl was a very generous man. He gave regularly to fund community needs, grow churches, and support those in need.

Daryl endowed two chairs at the University of California, Davis, for the Eye Center. The Daryl and Opal Geweke Endowed Chair in Glaucoma was awarded to Daryl's doctor, James Brandt, M.D., who helped treat his glaucoma. The Daryl and Opal Geweke Endowed Chair in Glaucoma Research was awarded to research scientist Nicholas Marsh-Armstrong Ph.D. in the Department of Ophthalmology & Vision science.

We will forever be grateful for Mr. Geweke and his extraordinary generosity and investment in vision science and glaucoma research. He will be greatly missed. •

“Daryl loved to help others grow and was always willing to take the time to share his knowledge. He was a very generous man. He gave regularly to fund community needs, grow churches, and support those in need.”

See the difference you can make

The mission of the UC Davis Eye Center is to provide the highest possible quality of patient care, to conduct pioneering research on the visual system and its disorders, and to train residents, medical students, practicing physicians, allied health personnel, and fellows for outstanding careers in either academic or clinical practice. We welcome gifts that support this mission.



To learn more about how to give to the UC Davis Eye Center, contact Sheena Summers at 916-878-9924 or email smlennie@ucdavis.edu

Donate today at <https://health.ucdavis.edu/eyecenter/giving/index.html>



Create Your Legacy at the UC Davis Eye Center

By leaving a gift in your estate plan, you can provide a lasting benefit for eye research and patient care.

Some of the methods currently available to donors seeking to make a legacy gift include:

- ✓ Bequest by Will or Revocable Trust or Charitable Remainder Trust
- ✓ Charitable Gift Annuity
- ✓ Charitable Lead Trust
- ✓ Pooled Income Fund
- ✓ Gifts of Real Estate
- ✓ Gifts of Appreciated Securities

To learn how you can include the UC Davis Eye Center in your estate plans, visit today at **PlannedGiving.UCDavis.edu**

As with all aspects of estate and tax matters, you should seek qualified legal, tax, and financial advice in developing your plan.

See the Impact of Your Generosity and Save On Taxes

If you are 70 1/2 or older, you can now make tax-free gifts to qualified charitable institutions such as UC Davis by making direct transfers of up to \$100,000 from your IRA. The transfer generates neither taxable income nor a tax deduction, so you receive the benefits even if you do not itemize your tax deductions.



How the Qualified Charitable Distribution Works:

- This opportunity applies only to IRAs, and not other types of retirement plans.
- If you are required to, but have not yet taken your Required Minimum Distribution (RMD) for the year, your Qualified Charitable Distribution can satisfy all or part of that requirement.
- Your gift will be put to use today, allowing you to see the impact your donation is making.w

To include UC Davis in your plans, please use our legal name and federal tax ID and please let us know of your gift. Many retirement providers assume no responsibility for letting nonprofits know of your intentions, so your goals may not be honored.

Legal name: UC Davis Foundation

Legal address: 202 Cousteau Place, Ste 185, Davis, CA 95618

Federal tax ID number: 94-6081352

To learn more about this tax-smart way to make an impact at the UC Davis Eye Center, please visit **PlannedGiving.UCDavis.edu/Give-From-Your-Ira**

We can help. We'd be happy to assist you. Please contact Brian Casey at plannedgiving@ucdavis.edu or 530-754-2286.

COLLABORATING FOR THE CHILDREN

> BY SHARI ROESLER, EXECUTIVE DIRECTOR



Learning to walk, understanding the world around them, and learning to read and write are milestones in every child's life. For children experiencing vision loss and blindness, this requires some extra support and collaboration so they too can achieve these milestones.

Much of what a child learns in the first two years comes from visual input. Whether it is facial expressions or seeing an animal and having someone tell them it's a dog, a cat, or a horse, kids begin to learn about and understand their world by looking. When a child has limited or no vision, learning must be done differently. That's where Society for the Blind can help both the child and parents.

Parents can feel lost about how best to help their child with vision loss succeed in life. This is why our collaboration with the pediatric ophthalmologists at the

UC Davis Eye Center is so critical. "As the child continues to receive medical care for their vision from us, they and their parents, also get to learn skills and techniques at Society for the Blind," noted Dr. Nandini Gandhi, Director of Pediatric Ophthalmology. "This collaboration provides an important network of support for our young patients and their families."

At Society for the Blind's Low Vision Clinic, children receive occupational therapy so they can use their remaining vision in the best possible way while also learning how to use assistive devices.

Society's CareersPLUS program provides children and youth living with vision loss with the support, skills, and opportunities to pursue their academic and social interests with confidence. We teach braille so children can learn to read, write, and develop their language skills. Braille literacy is essential for children with vision loss and blindness. Today, 95% of people with vision loss who go on to college and are employed know braille. Parents are encouraged to participate in activities so the family can learn about non-visual skills and resources.

Working with parents and the pediatric ophthalmologists, Society for the Blind helps to ensure there is a continuum of care for children and youth living with vision loss and blindness so they can discover, develop, and achieve their full potential. •

SOCIETY
FOR THE
BLIND

More than what you see



To learn more about Society for the Blind, please visit us at www.societyfortheblind.org or call us at **916-452-8271**.



EnVision is published by the UC Davis Eye Center. For more information about ophthalmology services and vision research at UC Davis, visit our website at health.ucdavis.edu/eyecenter or call (916) 734-6602.



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We look forward to sharing more information with you in the next issue of *enVision*!



MARK YOUR
CALENDAR!



For more information, please contact: **Rebecca Subbotin** | RHHeath@ucdavis.edu | 916-703-4662

<https://health.ucdavis.edu/eyecenter/cme/2025/2025-napa-eye.html>