

SPRING 2023

enVISION

News from the UC Davis Eye Center



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 UC Davis Eye Center

A Vision for the Future—
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 disease, 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.



CONTENTS

02	Eye to Eye
03	UC Davis Eye Center Executive Advisory Council
04	Ernest E. Tschannen Eye Institute Grand Opening
07	UC Davis Health Inaugurates State-Of-The-Art Eye Institute
12	Interview with Michael Drake
16	Vision Science at UC Davis
21	Center for Ocular Regenerative Therapy (CORT)
23	New Named Chairs
24	The Amazing Grace of UC Davis Vision Care
26	Honors and Awards
29	Publication List
38	Alumni Highlights
40	Faculty Yearbook
48	Faculty Retirements and Announcements
50	Event Updates
52	In Memoriam
54	Donor Honor Roll
61	Society for the Blind Acquires Braille Production Center
65	UC Davis Directory

Eye to Eye

On December 5, 2022, the Department of Ophthalmology & Vision Science celebrated the opening of the Ernest E. Tschannen Eye Institute (TEI) — the culmination of a decades-long dream to build a state-of-the-art eye center serving the region and our nation with the most advanced eye care.

The TEI is the product of a carefully crafted design process that included physicians, eye center staff, architects, designers, and most importantly, our patients. The 78,000 square foot building was conceived to be a place where patients with visual challenges could be cared for in an atmosphere of nurturing comfort combined with leading-edge technology.

Made possible by the catalytic gift from Ernest E. Tschannen, a grateful patient of the UC Davis Eye Center, the TEI has also benefitted from more than 800 additional donors for its establishment. The new institute houses the services provided by all the subspecialties of ophthalmology as well as optometry. In addition, TEI is the new home of the Center for Ocular Regenerative Therapy (CORT) under the leadership of Dr. Paul Sieving. CORT will emerge as a national center for the exploration and application of gene therapy to inherited retinal diseases, heretofore untreatable.



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DAVID MOTES, C.P.A.

Council Vice Chair

MICHAEL SCHERMER, M.D.

**UC DAVIS
HEALTH**

Eye Center

The key component that will animate the new building is the remarkable faculty at the UC Davis Eye Center. Dedicated to service to our patients and to finding new knowledge that will lead to more effective treatments and cures for disabling eye diseases, the faculty is breathing life into this beautiful new home.

The coming years will afford us the opportunity to change the course of eye care in our region and around the nation as we pair advanced clinical care with basic investigation into the causes and treatments of ocular disorders.

We hope that you will visit us at TEI and witness the future of vision care.



Mark J. Mannis

Fosse Endowed Chair in Vision Science Research
Chairperson
Department of Ophthalmology & Vision Science

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Ribbon-cutting and dedication marked milestone for Ernest E. Tschannen Eye Institute Building

New facility on UC Davis Health campus in Sacramento opened in December 2022

BY LISA HOWARD

Above: Chancellor Gary May, Ernest E. Tschannen and Professor and Chair of the Department of Ophthalmology Mark Mannis cut the ribbon, opening the Ernest E. Tschannen Eye Institute.

Around two hundred physicians, staff, family members, and friends of the UC Davis Eye Center were on hand Saturday, September 17, to celebrate the ribbon-cutting and dedication of the Ernest E. Tschannen Eye Institute Building. The morning event was also live-streamed for supporters unable to attend the ceremony in person.

Mark Mannis, the Fosse Endowed Chair in Vision Science Research and Professor and Chair of the Department of Ophthalmology & Vision Science, gave the welcoming remarks, noting that some of the attendees had come from as far away as Peru.

“After decades of dreaming of a state-of-the-art institute that would be the focus of leading-edge care and creative vision science for the region and the nation, we stand before this magnificent structure—the Ernest E. Tschannen Eye Institute Building,” said Mannis.

UC Davis Chancellor Gary S. May thanked Ernest E. Tschannen and the 850 additional donors who helped make the building possible. “We’re deeply grateful for your support. On behalf of the entire university, thank you.”

Vice Chancellor of Human Health Sciences and CEO for UC Davis Health, David Lubarsky, was also one of the morning’s speakers. “Going forward, the Eye Center will continue to transform vision care in the region and beyond by developing cures and groundbreaking care for patients with eye disorders,” Lubarsky said. The ceremony emphasized the teamwork and dedication of all those involved in creating the state-of-the-art eye institute.

“This leading-edge facility will enhance our faculty’s ability to care for patients, lead groundbreaking clinical trials and recruit and train the next generation of ophthalmologists,” said Susan Murin, interim dean of the UC Davis School of Medicine.

Additional speakers included Interim Vice Chancellor of Development and Alumni Relations



UC Davis Ophthalmologist Michele Lim, Ernest Tschannen, and Chancellor Gary May.

Shaun Keister and a video message from UC President Michael Drake. Lance Durfee from Vanir Construction Management, Inc. and Jeffrey Dill from McCarthy Builders, Inc. also gave remarks.

The guest of honor, Ernest E. Tschannen (pronounced “Shannon”), spoke toward the end of the ceremony. Tschannen, who is 97, donated \$18 million for the building’s construction. His lifetime giving totals more than \$38.5 million, making Tschannen UC Davis Health’s largest individual donor.

“After decades of dreaming of a state-of-the-art institute that would be the focus of leading-edge care and creative vision science for the region and the nation, we stand before this magnificent structure—the Ernest E. Tschannen Eye Institute Building.” — Mark Mannis

Tschannen grew up in Switzerland. In the 1950s he immigrated to Canada and then to the Midwest in the United States to pursue a career as an engineer. He began buying investment properties as a hobby and eventually quit his job to manage his properties full-time.



The donor wall in the lobby of the Ernest E. Tschannen Eye Institute Building commemorates the 850 donors who made the new state-of-the-art facility possible.

In 2000, Tschannen began losing his sight to glaucoma. When untreated, the disorder can result in vision loss and blindness. His optometrist referred Tschannen to the UC Davis Eye Center, where he underwent eye surgery by Michele Lim to improve his vision and manage his glaucoma.

In his remarks, Tschannen said he hoped the facility would help people have better health and better lives for generations to come. “ I thank all the people involved in putting up this building. I thank them for their efforts and hard work to get it finished. I just cannot thank you enough.” He also gave special recognition to Michele Lim and thanked everyone for what they had done for him.

“This leading-edge facility will enhance our faculty’s ability to care for patients, lead groundbreaking clinical trials and recruit and train the next generation of ophthalmologists.”

– Susan Murin

Interim Dean of the UC Davis School of Medicine

After the dedication ceremony, participants were taken on small group tours of the 78,000-square-foot building, which was nearing completion. The first floor is dedicated to clinical space for multiple specialties, including pediatrics, glaucoma, neuro-ophthalmology, imaging, retina, comprehensive ophthalmology and cornea services. It will also feature an optical shop and the Stanley A. and Barbara E. Fingerut Optometry Center.

The second floor is dedicated to refractive surgery, oculoplastic surgery, and research and includes the clinical trials office and the Center of Ocular Regenerative Therapies. Several departments will use the third floor, including the Eye Center and Anesthesiology and Pain Management. The fourth floor is dedicated to academic and faculty office space as well as the Barbara A. and Alan M. Roth, M.D. Pathology Laboratory.

Additional major donors for the Ernest E. Tschannen Eye Institute Building include Ted and Melza Barr, Wayne and Jacque Bartholomew, Louis J. and Karen Burns, Barbara E. Fingerut, Luis Izquierdo Jr., Nancy R. and John L. Keltner, Robert B. Miller, Dona and Gary Novack, Debbie and Bob Price IV, Alan M. Roth, Shelly and Michael Schermer, Molly and Mark Wood, Charlene L. Woodard and David R. Motes, Karen E. and Michael S. Zaharas, and the Zeiter Medical Group. A total of 850 donors made the building a reality, which are commemorated in an etched glass wall in the building’s lobby. ■



Historical ophthalmology artifacts displayed are displayed in waiting areas and include QR codes so patients can scan the codes to learn more about each artifact as they wait.

UC DAVIS HEALTH INAUGURATES STATE-OF-THE-ART EYE INSTITUTE

BY MICHELLE NELSEN, PR DIRECTOR, HGA



The Ernest E. Tschannen Eye Institute Building will accelerate UC Davis Eye Center's achievements in leading-edge vision research and clinical applications

UC Davis Health celebrated the opening of the new Ernest E. Tschannen Eye Institute Building and expansion of the Ambulatory Care Center on December 5, 2022. The facilities are providing hope to the vision-impaired for sight restoration through advanced technology, pioneering research and some of the world's best eye care clinicians. Designed by the national multi-disciplinary firm, HGA, in partnership

with San Francisco design firm TEF—the facility consolidates all of the nationally ranked UC Davis Health Eye Center's strengths under one roof, including ophthalmologic patient care, optometric services, clinical research and training, and departmental offices. The project was delivered under a design-build model led by McCarthy Building Companies, Inc. and supported by Vanir Construction Management.

The project was launched with a substantial gift from Ernest E. Tschannen, who had his sight restored by a clinician from the center, and additional funding from UC Davis Medical Center and other generous donors. The Ernest E. Tschannen Eye Institute Building now offers state-of-the-art facilities in which the Eye Center's world-class clinicians can provide transformational eye care, as well as train future ophthalmologists to treat generations of patients. Furthermore, the building provides the Eye Center's leading vision scientists—100 percent of whom are funded by the National Eye Institute—the ability to increase capacity for clinical trials by 50 percent.



Located at 4860 Y Street in Sacramento, California, The Ernest E. Tschannen Eye Institute Building is a carefully balanced integration of a partial renovation of the existing Ambulatory Care Center (ACC) with a major new addition. The resulting 78,500-square-foot building reserves a floor of clinics for general medical center use, as an expansion of the ACC, and includes 64,160 square feet of space dedicated to Eye Center operations, including physician offices and conference areas.

“With this magnificent new institute, the Eye Center will continue to transform vision care for our patients by combining leading-edge vision research and groundbreaking clinical care under one roof,” said Mark Mannis, the Fosse Endowed Chair in Vision Science Research and professor and chair of the UC Davis Department of Ophthalmology. “We are thankful for the generous donations, hard work and dedication that made the vision a reality.”

AN INTUITIVE DESIGN

The design approach for the Ernest E. Tschannen Eye Institute Building started with close collaboration with the Eye Center's clinicians and scientists to understand their unique needs and to establish critical criteria for designing the space. The team of consultants included architect Chris Downey, who lost his sight in 2008 and has since dedicated his career to enriching the architectural environment for the vision impaired. Downey's insights were key to HGA's and TEF's implementation of empathic design principles, as he shared important information with the team on the ways in which the vision impaired engage with spaces, evaluating the design from a perspective similar to many who will ultimately interact with it. The resulting patient-focused design for the new Eye Center offers a comfortable and intuitive experience for all.

“Bringing UC Davis Health Eye Center's new facilities to life has truly been a fulfilling experience for all of the consultants involved,” said Greg Osecheck, HGA's principal-in-charge. “From day one, we knew the spaces we were creating had the potential to dramatically improve the lives of clinicians, patients and vision scientists alike, and it was an honor to work closely with all of our project partners to ensure their usefulness long into the future. We're hopeful that the new Ernest E. Tschannen Eye Building and its supporting spaces will give rise to some of medicine's most transformational eye care solutions.”

“Working with the medical leadership of the Eye Center was one of the most challenging and rewarding experiences of my professional

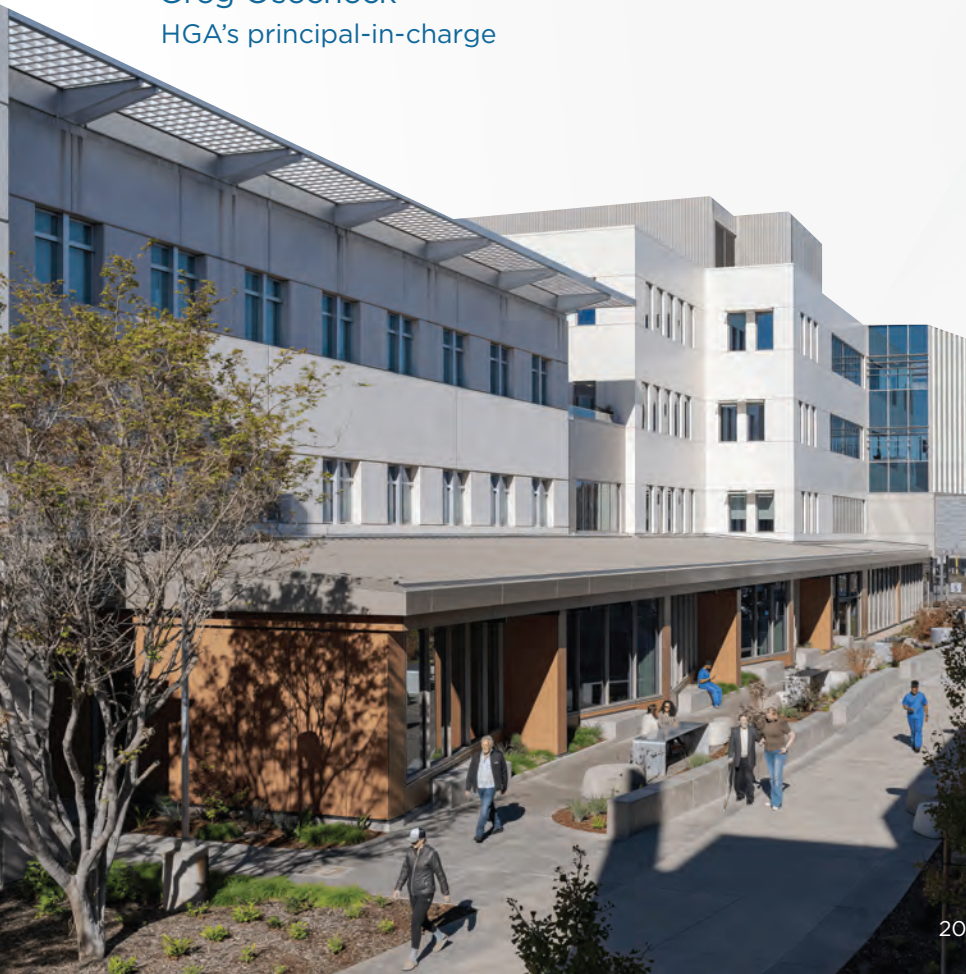
life. Emulating the passion and dedication of the medical team, their patient-first approach, and the care with which they considered every detail of the clinical setting made our contributions to the quality of the patient experience meaningful and rewarding,” added Alyosha Verzhbinsky, FAIA, TEF’s principal-in-charge.

From the exterior, the design establishes a strong identity for the Ernest E. Tschannen Eye Institute Building, unique within the medical campus context and distinct from the adjoining ACC. Striving to balance both comfort and inspiration, the warm, nature-toned exterior materials at the base and dynamically folding clear glass curtainwall above create a welcoming and uplifting environment. Intuitive design solutions start with the arrival experience at the Eye Center’s multi-story glass entry, located on the prominent building corner.

Inside the Eye Center, the clinic reception and waiting areas are located off of a unified circulation spine running the length of the building, aiding with wayfinding and seamlessly connecting the clinics in the new building with those in the renovated areas. This solution also takes advantage of the access to nature with the circulation spine running parallel to an exterior landscaped promenade. This strong spatial organization strategy—along with the use of standardized, multi-functional room sizes—provides the additional benefit of total flexibility for the Eye Center’s clinics, allowing the particular program extents to be reconfigured to their needs over time.

“Bringing UC Davis Health Eye Center’s new facilities to life has truly been a fulfilling experience for all of the consultants involved.”

– Greg Osecheck
HGA’s principal-in-charge



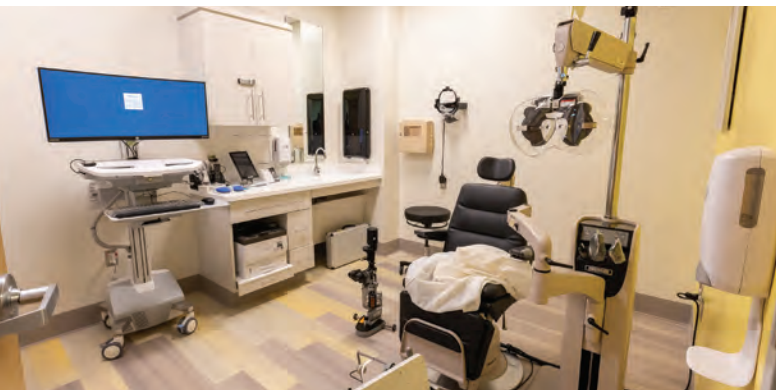
The Ernest E. Tschannen Eye Institute Building maintains a variety of other patient-centered components designed to both soothe and support patients, including:

- High-contrast colors and textures throughout the building to support better wayfinding
- Common spaces that radiate comfort and inspire patients throughout their visit, including home-like furnishings
- Biophilia, such as natural diffused daylighting, as well as patterns and views that connect patients with nature, as the use of filtered daylighting is particularly critical for the sight-impaired patient population, some of whom have their eyes dilated during their visit
- Wayfinding elements including natural materials and daylighting that contribute to the legibility of the Eye Center's patient and physician circulation, reducing patient anxiety and measurably improving health outcomes
- Amenities include an optical shop, outdoor terrace and exterior promenade connected to the parking structure with artwork, wall seating and lighting



throughout the duration of the pre-construction and construction process.

“As we continue to collaborate with the UC Davis Health system to create spaces that help improve patient outcomes and better the community, we’re especially proud of the work that our teams have achieved together to create the new Ernest T. Tschannen Eye Institute,” says Ian McQuoid, Senior Vice President of Operations at McCarthy Building Companies, Inc. “The new building will not only enable the Ophthalmology Department at UC Davis Medical Center’s Sacramento campus to achieve patient care excellence and improve the patient experience, but it will also increase operational efficiency for UC Davis Health.” ■



The collaborative design-build project brought together HGA as the executive architect, managing the project and leading architectural design, TEF's committed involvement in early overall project conceptualization, as well as leading the programming and interior planning, and design, and McCarthy as the general contractor facilitating cross-team collaboration

About UC Davis Eye Center

The Eye Center provides world-class eye care, pioneers collaborative vision research, and trains the next generation of specialists and investigators to become leaders in the Sacramento region and beyond. The Eye Center team aims to transform vision care and develop cures for blinding eye diseases, from cornea to cortex.

For more information, visit www.health.ucdavis.edu/eyecenter



OPTICAL SHOP

Ask an Eye Center staff member today!

**UC Davis Eye Center
Ernest E. Tschannen Eye Institute**

4860 Y Street, 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
530-757-6000 Appointments
530-747-3360 Davis Optical Shop

UC Davis Eye Services in Folsom

251 Turn Pike Drive, Suite 1070, Folsom, CA 95630
916-357-4880 Appointments
916-357-4888 Folsom Optical Shop

UC Davis Eye Services in Roseville

1620 E. Roseville Pkwy, Suite 200, Roseville, Ca. 95661
916-771-0251 Appointments
916-746-6401 Roseville Optical Shop

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



UC President Michael Drake meets with UC Davis Health staff during a tour of the UC Davis Medical Center in Sacramento during the COVID-19 pandemic, Sept. 17, 2021.

CREATING THE CIRCUMSTANCES FOR PEOPLE TO EXCEL

BY LISA HOWARD



Michael V. Drake, M.D.

UC President — and ophthalmologist — Michael V. Drake, M.D., talks about growing up in Sacramento, mentors, medicine and his hopes for the UC community.

Dr. Michael V. Drake is the 21st president of the University of California. He oversees UC's world-renowned university system of 10 campuses, five medical centers, three nationally affiliated labs, more than 280,000 students and 230,000 faculty and staff.

President Drake, who grew up in Sacramento, received his A.B. from Stanford University and his M.D. and residency training in glaucoma from UCSF. He subsequently spent more than 25 years on the faculty of the UCSF School of Medicine, ultimately as the Steven P. Shearing Professor of Ophthalmology and senior associate dean.

Your first summer job in the early '70s was at the original Tower Records in Sacramento. What was that like?

I loved working at the record store. All my high school friends would come by to visit. We could play any record in the store, anytime. This was before streaming services, so if you wanted to hear certain music, you had to own it or wait all day to hear it on the radio. We were among a small number of people in the world who could listen to any record, at any time. It was a great way to spend the summer.

What music did you listen to then, and what do you listen to now?

A musician I listened to then — and who I listened to this morning, driving to work — was Miles Davis. My friends at the record store played rock-and-roll all day. You could always tell when it was my turn to play something because you'd hear Miles. To find new music now, I watch whoever is performing on "Saturday Night Live." They do a good job of curating bands.

What was your childhood like growing up in Sacramento, and how did that influence your decision to go into health care?

My mother worked as a social worker at the county hospital — what is now UC Davis Medical Center. My father was a psychiatrist and was also involved in family practice primary care. What was known as general practice, back in the day. I knew my father worked hard at taking care of people, and that it meant a lot to him. I grew up thinking that was a normal thing to do.

I had severe asthma when I was growing up. I missed half of first grade due to my

asthma. My father kept epinephrine for me in the refrigerator, with syringes that my parents would boil on the stove. It sounds archaic, but it was like a little ER. When I would have to wake him up in the middle of the night because I couldn't breathe, my father never minded. He would just pop up out of bed and take me downstairs. He would give me the medication, and a minute later, I was better.

So, I learned two important things subliminally as a child. One is that it is a privilege to help people when they are in need. And second, that medicine could work and really could make people feel better.

How did you select ophthalmology for your residency?

I was one of those medical students who liked every specialty I rotated through. Ophthalmology, though, combined the problem-solving of medicine with the technical interventions of surgery. It was a great balance of those two things. In my rotations, I met people in the ophthalmology department who were great mentors and whom I still know today.

What influenced your choice of glaucoma as a subspecialty?

In medical school, I liked physiology as a way of thinking and approaching problems. Glaucoma is a physiologic disease that has surgical and medical interventions, so it had a lot of the things I was interested in. I also liked the public health demographics of glaucoma. Glaucoma is an addressable disease where we can make a real difference in people's lives with modern medicine.

Did you want to work in higher education when you began medical school?

Going to medical school and having a practice was my plan. What changed my mind was doing research as a medical student. One day during a general conversation about life and my future plans, one of my faculty research advisors, Dr. George Brecher, said, “You should think about an academic career. You could see patients, do research and teach. All the things you like doing — all together.” A few years later, during residency, I asked one of my professors, Dunbar Hoskins, Jr., M.D., about the long-term effects of a cyclo-cryotherapy procedure we did back then for intractable glaucoma. He said, “That’s a great question. We don’t really know the answer to that. You should do a study.”

I said, “Okay,” and set up a clinical study. I presented the results at our departmental alumni meeting. People were receptive. It put it in my mind that when you have a question that no one has the answer to, you can study it.

I never realized you could do that or that it was an option until I met people who were doing it.

What excites you most about vision science at UC Davis and other UC institutes?

It’s been great to see the direction ophthalmology has moved. It is technically more sophisticated and has also focused on the visual care of broad populations.

For example, the field has been focused on the public health ramifications of visual disability, visual loss, and visual impairment while working to uplift communities broadly, working more on preventive care.

Dr. Carol Mangione from UCLA has done really great work in looking at the public health impact of visual impairment and ways that we might lean into that.

A friend and former resident, Dr. Robert Weinreb from the Shiley Eye Institute at UC San Diego, has done a lot of work on psychophysics, diagnostics, and being able to measure the way the visual system is performing and to monitor it.

Dr. Jamie Brandt, from UC Davis, identified the predictive value of central corneal thickness measurements in glaucoma. Around the world, central corneal thickness



UC President Michael Drake speaks during the Neil & MJ Kelly Presidential Chair in Vitreoretinal Science Investiture Ceremony on Sept. 17, 2021, in Sacramento, CA.

measurements are another critical part of protecting the vision of patients with glaucoma.

These are just a few examples of some UC-centric work that has informed the way that we deal with eye disease worldwide.

What's the significance of having the Ernest E. Tschannen Eye Institute in Sacramento?

We have several wonderful eye institutes in the UC system that have done a great job. They have each become a world-connected center for vision research and advancing ophthalmology. It's terrific for this to be the case at UC Davis as well. UC Davis has had a great eye department for many years. Having an institute in the Sacramento area will help the community take that next step forward.

“We have several wonderful eye institutes in the UC system that have done a great job. They have each become a world-connected center for vision research and advancing ophthalmology.”

In September 2021, you visited the UC Davis Health campus. You attended the investiture ceremony for Dr. Paul Sieving as the inaugural holder of the Neil and MJ Kelly Presidential Endowed Chair in Vitreoretinal Science. What about that visit stood out for you?

I remember the sense of community. Many friends and committed, connected people came together for the first time since the pandemic started to celebrate the gift created for the Eye Center. Many faculty at the Eye Center have been my colleagues and friends since the very beginning of my career.

Dr. Sieving has had a tremendous impact on vision care and vision science. He was considering many different institutions. We were pleased and proud that he chose UC Davis. It was wonderful to have him inducted as the inaugural chairholder and to be able to celebrate the donors. The event was wonderful from all points of view.

As president of the University of California, how have you seen philanthropy influence the trajectory of our mission?

One of my great mentors, Dr. Lloyd Hollingsworth “Holly” Smith from UCSF, said something to me about 15 years ago. I was doing a recruitment for a dean, and we were walking across the street. Holly had an aura. If it were a movie, he'd have a little glow around him. As we were walking, he patted me on the shoulder and said, “Just remember that the difference between A and A+ is huge.”

As a university, we can get to the A level in many things on our own. But sometimes, it takes a little boost to get from A to A+. And often that boost comes from philanthropy. Our supporters investigate and determine areas where a financial boost can turn that next step into that next leap.

What does it mean to you that donors like Ernest Tschannen and Neil and MJ Kelly make significant philanthropic investments to departments such as the UC Davis Eye Center?

The philanthropists that I've worked with are very thoughtful people. They think carefully about where they want to make their investment, and they want it to make a difference.

I feel like we are partners in helping to make the world a better place in a meaningful way. It is among the real rewards of being in this kind of work to say that individuals can make a difference in the quality of life and the quality of the community that they live in.

What is your greatest hope during your tenure as president of the University of California?

I am fascinated by the different directions we're moving. It's great to see the number of nationally and internationally significant contributions being made broadly across the University of California. I think the UC Davis Eye Center will facilitate many of these contributions.

The University of California is a very large community of 500,000 people. The goal is to facilitate each of them fulfilling their human potential. And that goes for our students, staff and faculty. I want to help create circumstances for people to excel. Like I learned from my father, it's a great privilege to help others do well. ■

DRIED GOJI BERRIES

May Provide Protection Against Age-Related Vision Loss

BY LISA HOWARD

UC Davis Study Shows Small Serving of the Fruit Increased Protective Pigments in the Eye



Regularly eating a small serving of dried goji berries may help prevent or delay the development of age-related macular degeneration, or AMD, in healthy middle-aged people, according to a small, randomized trial conducted at the University of California, Davis.

AMD is the leading cause of vision loss in older people and is estimated to affect more than 11 million in the United States and 170 million globally. “AMD affects your central field of vision and can affect your ability to read or recognize faces,” said Glenn Yiu, a co-author of the study and an associate professor in the Department of Ophthalmology and Vision Sciences.

The researchers found that 13 healthy participants aged 45 to 65 who consumed 28 grams (about one ounce, or a handful) of goji berries five times a week for 90 days increased the density of protective pigments in their eyes. In contrast, 14 study participants who consumed a commercial supplement for eye health over the same period did not show an increase.

The pigments that increased in the group that ate goji berries, lutein and zeaxanthin, filter out harmful blue light and provide antioxidant protection. Both help to protect the eyes during aging. “Lutein and zeaxanthin are like sunscreen for your eyes,” said lead author Xiang Li, a doctoral candidate in the Nutritional Biology Program. “The higher the lutein and zeaxanthin in your retina, the more protection you have. Our study found that even in normal healthy eyes, these optical pigments can be increased with a small daily serving of goji berries,” said Li.

The study was published in the journal *Nutrients*. Goji berries are the fruit of *Lycium chinense* and *Lycium barbarum*, two species of shrubby



bushes found in northwest China. The dried berries are a common ingredient in Chinese soups and are popular as herbal tea. They are similar to raisins and eaten as a snack.

In Chinese medicine, goji berries are said to have “eye brightening” qualities. Li grew up in northern China and became curious whether there were any physiological properties to “eye brightening.” “Many types of eye diseases exist, so it is not clear which disease ‘eye brightening’ is targeting,” said Li.

She researched the bioactive compounds in goji berries and found they contain high quantities of lutein and zeaxanthin, which are known to reduce the risk of eye diseases related to AMD. The form of zeaxanthin in goji berries is also a highly bioavailable form, according to Li, meaning it is readily absorbed in the digestive system so the body can use it.

The current treatment for intermediate stages of AMD uses special dietary supplements, called AREDS, that contain vitamins C, E, zinc, copper and lutein and zeaxanthin. No known therapy has yet been shown to impact early stages of AMD.

The cause of AMD is complex and multifactorial, according to Yiu, and involves a mix of genetic risks, age-associated changes, and environmental factors like smoking, diet and sun exposure. Early stages of AMD do not have symptoms; however, physicians can detect AMD and other eye problems during a regular comprehensive eye exam.

“Our study shows goji berries, which are a natural food source, can improve macular pigments of healthy participants beyond taking high-dose nutritional supplements,” said Yiu. “The next step for our research will be to examine goji berries in patients with early-stage AMD.”

Although the results are promising, the researchers note that the study size was small and more research will be needed.

Additional authors on the study include Roberta R. Holt, Carl L. Keen, Lawrence S. Morse and Robert M. Hackman from the University of California, Davis.

From glaucoma discoveries that hold clues about Alzheimer’s disease to stem cell therapies that reverse blinding eye diseases, every day, UC Davis Eye Center researchers and specialists are expanding the horizons of what vision science can do for patients. Our partnerships across fields, including our extraordinary collaboration with colleagues at the world’s best veterinary school, position us to accelerate groundbreaking science, leading-edge therapies and ultimately, cures. ■

ERNEST E. TSCHANNEN GRANOLA

1 CUP GRANOLA

1 CUP GOJI BERRIES

1 CUP ROASTED PEPITAS

1 CUP ROASTED ALMONDS

1 CUP BANANA CHIPS

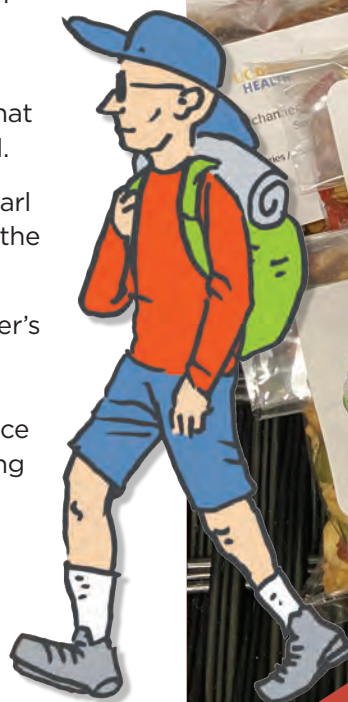
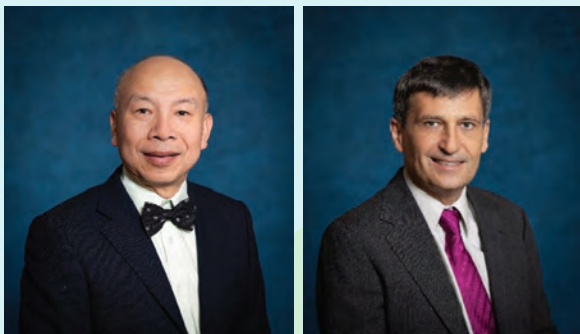


Illustration courtesy of Samuel Sellers



COLLABORATION WITHIN UC DAVIS EYE CENTER

BY NICHOLAS MARSH-ARMSTRONG, PH.D. AND MIN ZHAO, M.D., PH.D.

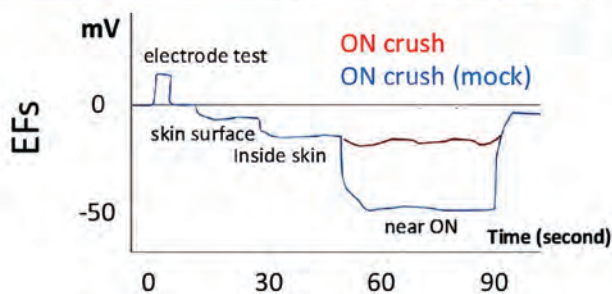
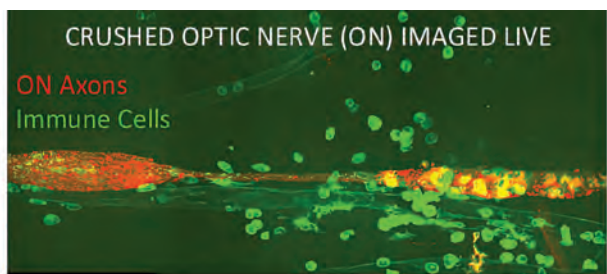
Although they thought the areas of science that they study were very different, professors Dr. Marsh-Armstrong and Dr. Zhao have found common ground, and their collaboration may lead to much more than the sum of its parts.

Dr. Nicholas Marsh-Armstrong, a neurobiologist who came to UC Davis from Johns Hopkins University School of Medicine's Department of Neuroscience in 2016, studies glaucoma. He is interested in why it is that axons, the cables that carry visual information between the eye and the brain, are damaged in such a way that gives rise to the very characteristic

pattern of vision loss that defines glaucoma. About a decade ago, he accidentally discovered a strange process that occurs in the optic nerve head, the small region behind the eye where axons are damaged in glaucoma. He discovered that even in otherwise healthy animals, the axons were shedding parts of themselves, and those parts surprisingly contained mitochondria, which are the batteries that power all the cells in the body. Since his discovery, other laboratories have found that such unusual shedding of mitochondria occurs in diverse animals, even worms, and in diverse places in the body, such as the heart. Most intriguingly, the shedding of mitochondria appears to be increased in the brain of animal models of both Parkinson's and Alzheimer's disease.

Since moving to UC Davis, one of the Marsh-Armstrong laboratory's main efforts became trying to understand not only whether such mitochondria sheddings occur more commonly in glaucoma, as they do in the other neurodegenerative diseases, but also whether they may be a driving mechanism in the spread of vision loss that too

many patients experience even when their intraocular pressure seems to have been brought under control. One of Dr. Marsh-Armstrong's graduate students, Yaeram Jeong, who will be graduating this year,



did her doctoral dissertation on the question as to whether the very specific mutations in one particular gene that causes glaucoma might do so by increasing the unusual shedding process. To both her and Dr. Marsh-Armstrong's delight, they did. This is the first evidence that the mitochondrial shedding process might actually be causing disease. Indeed, the lab now has even more recent data showing that the shedding process is not uniform but happens very focally, consistent with the focal nature of vision loss in glaucoma, and that days after the excessive mitochondrial shedding caused by the mutated gene, immune cells come into the optic nerve to clear the excessive debris and appear to damage other healthy axons in the process. Could this explain why glaucoma vision loss spreads?

Dr. Zhao, with expertise in bioelectricity in wound healing and regeneration, came to UC Davis in 2007 from the Department of Biomedical Science and Department of Ophthalmology, University of Aberdeen, Scotland. He joined the Department of Dermatology and the Department of Ophthalmology to study wound healing and regeneration. He is interested in why injured tissues naturally produce electric fields, and how the electrical signals mobilize and guide the directional migration and growth of cells to heal the injuries. About 20 years ago, his lab demonstrated that the electric fields may provide a master signal for some critical healing responses of cells in wounds. His lab also discovered the first sets of genes that underlie how cells sense and respond to the most minute electric fields. After moving to UC Davis, Zhao's lab has expanded his research to understand the "molecular generators" that produce endogenous bioelectricity. He also is searching for the sensor molecules in the cells for the physiological electric fields. On the translational side, Dr. Zhao is part of a DARPA program to develop bioelectronic devices for better wound healing.

The retina and the optic nerve are among the tissues that have the most electrical activities in our body. Both Drs. Marsh-Armstrong and Zhao were very excited when they got together a few years to determine whether their expertise would synergize. Could the shedding process of mitochondria from axons generate a unique electric field? What about the focal loss of axons that occurs in glaucoma? Finally, could electric fields be used to modify the behavior of the immune cells in such a way as to change the course of disease? Dr. Zhao had already shown that electric fields can be used to change the movement of immune cells, and in generating preliminary data for a grant to further their collaborations, Dr. Zhao and Dr. Marsh-Armstrong found that, indeed, unique electric fields can be used to discriminate between healthy and damaged optic nerves.

The hope for the future now is to learn how to use these fields to prevent further damage, or even to repair the damaged optic nerves. These are lofty goals, but ones that could never be attained by either lab alone, but only through their creative collaboration. ■

"After moving to UC Davis, Zhao's lab has expanded his research to understand the 'molecular generators' that produce endogenous bioelectricity."



TELEMED NETWORK

In December 2022, Dr. Glenn Yiu was awarded a \$2 million grant from the UCOP Multicampus Research Programs & Initiatives (MRPI) program, which is intended to facilitate cross-campus collaborations to advance California and its people. He will be leading a team of public health, clinical informatics, and implementation science experts from UCSD, UCSF, and UCLA to help expand eye care access in California over the next 4 years using remote eye imaging, with the goal of achieving benchmark targets for diabetic eye screening across the 4 UC health campuses.

ROI GRANT

By Ravi Jonnal, Ph.D.

I am an assistant professor in the Eye Center, and my research is focused on how the neurons of the retina respond to light and generate a visual signal destined for the brain. For the past fifteen years, I have been interested in developing optical methods to detect whether these neurons are working correctly in the living human eye. This area is exciting to me because it has great potential to impact patient vision, by improving the ability of ophthalmologists to assess eye health and the ability of drug developers to quickly ascertain whether candidate therapeutics are effective in clinical trials. Like many research areas, it is highly competitive and research funding is difficult to acquire.

Soon after my faculty appointment at UC Davis five years ago, my colleagues Jack Werner, Robert Zawadzki and I, along with our postdoc Mehdi Azimipour, designed an experiment that we hoped would demonstrate for the first time

that light-evoked responses in human rod and cone photoreceptors could be recorded optically. We constructed the requisite optical system, which required more than a year, and acquired an experimental laser from colleagues in Germany that had the characteristics required for the experiment.

Weeks before the experiment, to our great dismay, the laser failed. We learned that replacement components and the time for repairing and testing the laser would cost more than \$50,000. Around that time, Larry Morse, the director of the retina service, had a patient who wanted to make a donation to the Eye Center of \$100,000. At Larry's behest, the patient donated it to our research group and thus enabled us to repair the laser quickly. We conducted the experiment after a delay of only a couple of months, and it resulted in two publications in the journals *Optica* and *Optics Letters*. These exciting findings were publicized by the National Eye Institute and written about in several popular scientific magazines. I then used the working system to acquire pilot data for an National Institutes of Health (NIH) grant proposal, which was funded last year.

I did not fully appreciate the impact of the patient donation until I realized that several other research groups had also been working on very similar experiments, the results of which were published within months of our first paper. Further delays in our work could have jeopardized our group's preeminence in the area. Worse, they may have delayed my grant application and allowed another lab to overtake us. Instead, those high-profile papers and the successful grant application jump-started my career, and I am forever grateful to Larry's patient.

CLINICAL TRAILS OVERVIEW

- ✓ 17 funded clinical trials
- ✓ 8 upcoming funded trials (pending approvals)
- ✓ 15 unfunded prospective trials
- ✓ 19 retrospective chart review studies

CLINICAL TRAILS SPOTLIGHT

Glenn Yiu, M.D., Ph.D., is currently enrolling for a study sponsored by RegenXBio and is for patients with nAMD. If assigned to the gene therapy arm, the patient receives a one-time subretinal injection of RGX-314. To learn more about clinical trials happening at the UC Davis Eye Center, please contact Denise Macias at **916-734-6303**.

Center for Ocular Regenerative Therapy (CORT)

BY PAUL SIEVING, M.D., PH.D.



Regenerative medicine is the new frontier, which is transforming clinical care and therapy for patients. This extends to patients with inherited, genetic forms of retinal and macular degeneration, using tools of gene therapy

and cell transplantation. The Department of Ophthalmology & Vision Science at UC Davis is particularly strong in these areas and is in the right place at the right time to invest in these challenges.

With assistance of the School of Medicine and UC Davis Health, the Department of Ophthalmology & Vision Science has launched a new Center for Ocular Regenerative Therapy — CORT. The goal of CORT is to provide leading-edge care for patients with “inherited retinal dystrophies” (IRD vision diseases) and to conduct translational research toward developing new therapies for genetic retinal diseases. Individuals with IRD conditions progressively lose vision over a lifetime and ultimately suffer major or total loss of sight.

The goal of CORT is to provide leading-edge care for patients with “inherited retinal dystrophies” (IRD vision diseases) and to conduct translational research toward developing new therapies for genetic retinal diseases.

CORT was initiated by the recruitment of Paul A. Sieving, MD, PhD, from the National Institutes of Health, where he was the Director of the National Eye Institute. Under his leadership, the National Eye Institute worked to support basic vision scientists and also to develop programs to convert fruits of scientific knowledge into patient care. Across his entire career, Dr. Sieving has worked toward developing restorative gene therapy to stem vision loss from genetic retinal degenerative diseases. He is known internationally for his work on IRDs, including mounting the first human ocular gene therapy trial for X-linked Retinoschisis while he was at the NIH. Dr. Sieving currently is the Neil and MJ Kelly Professor of Vitreoretinal Research in the School of Medicine.

As Dr. Mark Mannis, MD, Chair of the department of Ophthalmology, has said: “Working together with basic- and clinician-scientists in UC Davis School of Medicine and the School of Veterinary Medicine, CORT is well positioned to join the national ranks of the few other IRD centers across the country.”

The mission of CORT is to develop and deliver state-of-the-art clinical care for patients with vision loss from genetically-inherited retinal degenerations. CORT begins with IRD clinical patients, providing the best of medical care currently possible. This includes accurate diagnoses from among more than 100 types of IRD, using advanced retinal imaging and functional testing to stage the condition, and conducting genetic testing to identify the causative gene and provide genetic counseling and planning for disease progress.

CORT clinicians and scientists explore the changes that occur in the retina when it is injured by disease. In some cases, this can be done by replicating the human retinal disease in mouse models and by in-vitro organoid studies of consequences to the retina and to evaluate rescue strategies for each condition. Organoids are tissue cultures that grow into young retinas in a laboratory dish. The laboratory process of creating an organoid begins when an IRD patient volunteers a tiny snip of skin to the project, and an organoid is grown from these skin cells.

The overarching goal of these two stages is to work together on translating clinical knowledge into research programs, and then translating new research knowledge into eventual clinical care. Among the therapeutic approaches CORT is exploring are pharmacologic rescue, cell-based delivery, and gene augmentation therapy.

Resources at UC-Davis are remarkably deep to build and support the CORT regenerative vision therapy program. Resources include a GMP (“good manufacturing process,” an international standard) cell and vector production facility, which can produce clinical-grade experimental drugs that can be taken to human clinical trials that explore new therapies.

UC-Davis is also home to one of seven National Primate Research Centers (NPRC). Remarkably, here at the California NPRC some non-human primates have been identified with the same genetic vision loss from retinal degeneration that affects some of our clinical patients. Studying these animals provides key insights into translating therapy for our patients and may also provide insights into therapies to improve the lives of agricultural and domestic animals.

These resources complement the clinical mission of UC-Davis Health, which provides medical and vision services to all of northern California and east to Reno, Nevada and beyond. These regions currently have no IRD clinical specialty care. Currently, clinical specialty care for IRD patient requires them to driving north to Portland or east to Salt Lake City.

A word of explanation about IRD diseases. IRD conditions are the major cause of visual disability and blindness among working-age individuals, and the IRDs are the second most common cause of vision loss in children. IRD can be “dominant” and affect family members in successive generations. Alternatively, they can be “recessive” and appear in only a single generation, possibly also affecting siblings. In some IRD conditions, only the men in a family are at risk. Interpreting these inheritance patterns starts with an accurate diagnosis, requires DNA testing offered through CORT, and then interpretation by a medical geneticist. Professor Suma Shankar, MD, PhD, is an ophthalmologist and medical geneticist at UC Davis Health who assists the clinical work of CORT.

IRD conditions are the major cause of visual disability and blindness among working-age individuals, and the IRDs are the second most common cause of vision loss in children.

Most IRD conditions cause failure and loss of the photoreceptor cells in the retina at the back of the eye. The photoreceptors are activated by light as the first step of vision. They respond to the light of an image that enters the eye, and they transform this to neural impulses that ultimately reach vision centers in the brain. Each of our eyes has approximately 130 million photoreceptor cells, and having vision throughout our life requires survival and healthy function of these cells.

Retinitis pigmentosa (RP) is one of the IRD conditions. RP progresses slowly but relentlessly and usually takes the peripheral vision first, often

beginning in the 20's. By middle and later age, often only a central “tunnel” of vision remains, allowing a person to look straight ahead but robbing them of side vision.

The reverse case occurs in Stargardt macular degeneration. Stargardt usually begins with younger people. It causes loss of central vision loss by the 20's. Central vision is required to read a book, see the blackboard in school, or recognize the face of a friend.

RP and Stargardt and many other IRDs result from mutations occurring in any of more than 350 individual genes that are critical for the health, function and survival of photoreceptors and retinal neurons.

A number of clinicians, scientists, and translational researchers are part of CORT. The core clinical team includes Professors Paul Sieving, MD PhD, Ala Moshiri, MD, PhD, and Suma Shankar, MD, PhD. Retina Service clinician-scientists in the Ophthalmology Department also participate and are running gene therapy and cell-based treatment trials, including Professors Susanna Park, MD, PhD, and Glenn Yiu, MD, PhD. In the School of Veterinary Medicine, Professors Sara Thomasy, DVM, PhD, and Brian Leonard, DVM, PhD, are ophthalmologists and vision scientists in the CORT orbit who care for animals with ocular diseases and work toward new treatments beyond what exists now. In addition, some of the translational work is undertaken at the California National Primate Research Center at UC Davis, under the director John Morrison, PhD.

In summary, the new Center for Ocular Regenerative Therapy, CORT, is at the top of the game nationally to develop these leading-edge therapies and to bring them to our visually disabled patients.

The new CORT programs complement the clinical mission of UC-Davis Health, which provides medical services to all of northern California and east to Reno and beyond. We are excited as we prepare to offer clinical, FDA-authorized ocular gene therapy by the year-end to infants and adults born with severely limited vision from a congenital type of IRD, termed Leber Congenital Amaurosis or LCA type 10, caused by RPE65 gene mutations. A single application of the Luxterna® gene therapy will give hope for a lifetime of better vision. For some IRD patients, the future is here already. ■

NEW NAMED CHAIRS

BY LISA HOWARD

The Eye Center at UC Davis Health has two new endowed chairs focused on glaucoma, thanks to a generous donation from business entrepreneur Daryl Geweke.

James D. Brandt, M.D. and Nicholas R. Marsh-Armstrong, Ph.D., professors in the UC Davis Department of Ophthalmology & Vision Science, are the inaugural holders of the new endowed chairs. Their investitures were celebrated at a ceremony held on August 6, 2022.

People in Lodi, Stockton and greater Sacramento may recognize the Geweke name from his many businesses in the region. Geweke opened his first auto dealership in Lodi in 1966 — Geweke Ford. Over the next several decades, he went on to own Geweke Toyota, Dodge, Chrysler, Jeep, Kia and an RV dealership. His business later grew to include hotels, a convenience store, a car wash, and an office and retail building. Geweke's wife of 68 years, Opal, named in the endowed chairs, passed away in 2018.



James D. Brandt, M.D. and Nicholas Marsh-Armstrong, Ph.D., inducted as the inaugural chairholders for glaucoma and Glaucoma research

Brandt, **the inaugural holder of the Daryl and Opal Geweke Endowed Chair in Glaucoma**, treats glaucoma, particularly in

children. He strongly believes that an informed patient is an empowered patient.

Dr. Brandt considers partnering with parents and watching their kids grow up one of the most important (and fun) things he does. As a volunteer with Orbis International, a non-profit, non-governmental organization dedicated to saving sight worldwide, Dr. Brandt has traveled to more than a dozen developing countries to care for children with glaucoma and to teach surgical techniques to local surgeons.

Marsh-Armstrong, **the inaugural chairholder of the Daryl and Opal Geweke Endowed Chair in Glaucoma Research**, studies basic science questions related to glaucoma. His lab focuses on three main areas of research.



Daryl and Opal Geweke

First is understanding changes that occur at the optic nerve head in the eye. This is where the damage is thought to occur in glaucoma. Second is understanding the significance

of the shedding of mitochondria (cell structures that generate energy) at the optic nerve head. And third is trying to understand how some species can rewire the eye and brain after an injury (something humans cannot do). The goal is to translate the research findings into glaucoma diagnostics and therapeutics.

It is estimated that about **3 MILLION** people in the U.S. and about **80 MILLION** worldwide **have glaucoma.**

It is estimated that about three million people in the U.S. and about 80 million worldwide have glaucoma. It is the second-leading cause of preventable blindness in the world today. In the early stages, many people with glaucoma have no symptoms. But glaucoma can be detected before there are symptoms through a comprehensive dilated eye exam. With early detection, glaucoma can be controlled through medications or surgery. Early diagnosis and treatment can protect the eyes against serious vision loss. ■

THE AMAZING GRACE OF UC DAVIS VISION CARE

Eye patient makes a greater gift in honor of doctor who saved her sight

BY ASHLEY HAN

Anne-Marie Messano Petrie knew exactly where she wanted to allocate the \$10,000 she won by entering the In Greater Focus magazine survey contest. For years she had been meaning to make a gift to the UC Davis Eye Center and winning this contest was the motivating push.

“I was super excited when I found out I won because I’ve never won anything in my life,” Petrie said. “This survey contest was a catalyst for starting my endowment in honor of Dr. Ivan Schwab, who saved me from going blind.”

Schwab is a professor of ophthalmology at UC Davis School of Medicine and he has been the director of corneal services at the UC Davis Medical Center. Now retired, Schwab is known for the development of a bioengineered artificial corneal surface among his many clinical and teaching credentials. He has been a board director on the American Board of Ophthalmology and achieved the Life Achievement Award from the American Academy of Ophthalmology in addition to numerous teaching awards locally and nationally.

Along with the \$10,000 survey prize, Petrie added \$50,000, creating an endowed fund to support cornea research and advance ophthalmology initiatives at the UC Davis Eye Center in honor of Schwab for his dedication and the exceptional care given to his patients.

“I don’t know a better way to pay it forward than to give back to UC Davis and promote the future of UC Davis eye care so other people can have the benefit I had,” Petrie said. “I hope my gift is the beginning of increased availability of care for all people who live in this area.”

“WAS BLIND BUT NOW I SEE”

Petrie’s declining vision forced her into early retirement after a thriving career in media and entertainment, serving as CBS Radio’s vice president/national political director for nine years. Petrie started as director of business development for CBS Radio in California and later led national and statewide political advertising with the network’s 126 stations in 27 major markets.

“I was excelling at my job, working out and being healthy, but everything stopped when I got sick,” Petrie said. “When you’re healthy, you don’t understand how important medical care is.”

In 2014 Petrie was diagnosed with a thyroid storm, a rare health condition that occurs as a result of untreated hyperthyroidism. The symptoms impacted her suddenly and she remembers her eyesight deteriorating fast. As someone who studied literature in college, Petrie said she couldn’t bear not being able to read.

“I’ve never had doctors who seemed to care for me as much as Dr. Schwab, Dr. Jeffrey Tanji, Dr. Lily Koo Lin, Dr. Nandini Gandhi, Dr. Jennifer Li and Dr. Reginald Low—all my doctors at UC Davis,” Petrie said. “There was a point when I was being



monitored every week for the inflammation and swelling in my optic nerve because once that nerve gets crushed, you're blind."

Petrie's doctors collaborated to give her the best outcome, from treatment to surgery to recovery. Schwab continued to see Petrie regularly for years after her thyroid storm was treated.

"It sounds corny but when I think of UC Davis and my doctors, it reminds me of the song, Amazing Grace; I was going blind, but now I can see," Petrie said, tearing up.

A BLOSSOMING RELATIONSHIP

Petrie is now a donor and volunteer at UC Davis, who has helped the Eye Center raise money on Give Day for the past two years. This year, her \$2,500 Comparative Ophthalmology Advancement Challenge for Give Day was unlocked and she matched the gift. But her relationship with UC Davis Health has been decades-long.

Her care at UC Davis Health started when she and her husband, former Sacramento Kings President of Basketball operations Geoff Petrie, moved to Sacramento in 1994.



Readers of *In Greater Focus* had the opportunity to take an online survey in December 2021 and could enter to designate \$10,000 of UC Davis Foundation funds to a UC Davis area of their choice.



"What makes UC Davis truly unique is the incredible doctors who specialize in so many different areas and how they all communicate with each other," Petrie said. "I could have died from my thyroid storm but my doctors continue to monitor my health with the highest professional standard to this day."

The UC Davis School of Veterinary Medicine also holds a special place in Petrie's life. She was on the board of Homeward Bound Golden Retriever Rescue and had taken her own rescue golden retrievers to the vet school for their health care.

"UC Davis became a very important part of my life and although I have a busy schedule, I like to stay up to date with what's happening in health and vet med," Petrie said. "The magazine was a way for me to read and pay attention to what UC Davis was doing."

Petrie said that taking the online magazine survey was a great way to give feedback to the university. Her gift is part of UC Davis' \$2 billion fundraising campaign, Expect Greater: From UC Davis, For the World, the largest philanthropic endeavor in university history. Together, donors and UC Davis are advancing work to prepare future leaders, sustain healthier communities, and bring innovative solutions to today's most urgent challenges.

"Although my gift is a small part of UC Davis' \$2 billion campaign, like a drop in the water, I wanted to be a part of that ocean and I'm proud to support UC Davis," Petrie said. ■



HONORS & AWARDS

July 2021: Congratulations to Primo Lara, Jr., M.D. as the primary investigator and from the UC Davis Health Comprehensive Cancer Center, and **Allison Liu, M.D., Ph.D.** as the scholar from the UC Davis Health Eye Center, for receiving the Paul Calabresi K12 Career Development Award of around \$670,000 from the National Cancer Institute (NIC).

July 2021: Glenn Yiu, M.D., Ph.D. became a Fellow of the American Society of Retina Specialists (FASRS).

July 2021: Glenn Yiu, M.D., Ph.D. and **Marcela Estrada, M.D.** received a \$100,000 grant from the Lions Club International District 4-C5 as well as an additional \$100,000 matching grant from the Lions Club International Foundation. Amblyopia and Diabetic Retinopathy are leading causes of preventable vision loss in the United States among children and adults. This grant will allow them to acquire handheld child vision photo screeners and teleophthalmology technologies using retinal fundus cameras as they

are rapidly enhancing the availability and efficiency of screening for amblyopia and other childhood vision problems as well as diabetic retinopathy.

August 2021: Congratulations to **Dr. Barbara Arnold** who received the Silver & Gold Award and the University of Colorado Alumni Banquet.

November 2021: Marie Burns, Ph.D. was awarded the Innovative Neuroscience Award during the fast-pitch competition during the Society for Neuroscience 2021 meeting.

April 2022: Congratulations to trainee **Kaitryn Ronning**, who was trained under **Marie Burns, Ph.D.** for receiving the MIT Outstanding Poster Competition in the IM Section Winner during the ARVO meeting.

May 2022: Kudos to **Dr. Michele Lim** for her formal induction into the American Ophthalmological Society (AOS) at the recent meeting held in Colorado.

May 2022: The Macula Society International Committee and Awards Committees have selected **Glenn Yiu, M.D., Ph.D.**, as one of the recipients for the 2022 International Travel Grant for your abstract entitled “Soft Drusen in Nonhuman Primates as an Animal Model of Early Age-Related Macular Degeneration”. He will be presented with a certificate and check at the 45th Annual Meeting in Berlin.

May 2022: Terisa Yiin, Kohl Scholarship recipient in 2021, presented her research on “Survey on Ophthalmology Administrative Staff Workflow and Job Satisfaction” during the Napa Symposium.



June 2022: Jennifer Li, M.D., a professor of Ophthalmology and Director of the Cornea and External Disease Service at UC Davis Eye Center, has been appointed chair of Eye Bank Association of America (EBAA). In this prestigious role, Dr. Li will work with the EBAA President and CEO to set the association's strategic direction, provide oversight, and manage the board's activities and discussions. She was elected in 2020 and spent two years as chair-elect before beginning her term as chair in June. Congratulations, Dr. Li!

June 2022: California Governor Gavin Newsom has appointed **Jonathon Ross, O.D., M.S., F.A.A.O.**, who is a Principal Optometrist at UC Davis Health in the Department of Ophthalmology, was appointed on June 8, 2022, to serve on the California State Board of Optometry.

June 2022: Congratulations to **Dr. Christopher Murphy** for receiving the Alumnus of the Year award during UC Davis Eye Center Resident and Fellow Research Symposium as well as receiving the Lifetime Achievement Award during the January CVS Symposium.

July 2022: Allison Liu, M.D., Ph.D. was awarded a 2022-2023 Academic Senate Large Grant from the University of California, Davis Academic Senate.

July 2022: Glenn Yiu, M.D., Ph.D., became the Co-Chair of the RE Section of the ARVO

Annual Meeting Program Committee (AMPC).

August 2022: Mark Goldman, Ph.D. from the Department of Ophthalmology at the University of California, Davis, received a National Institutes of Health (NIH) RO1 grant as a principal investigator, along principal investigator, Emre Aksay, Ph.D. from Weill Medical College of Cornell University for their project called Circuit mechanisms underlying persistent activity in a neural integrator.

September 2022: Gary D. Novack, Ph.D. was honored by the American Academy of Ophthalmology (AAO). In the AAO's honors for its 2022 Annual Meeting, Dr. Novack received the Secretariat Award for Special and Unique Contributions to the Academy and the Field of Ophthalmology for his work on the Academy's journal, Ophthalmology Glaucoma. Dr. Novack serves as both an author and reviewer for this journal.

October 2022: The American Academy of Ophthalmology awarded **Dr. Paul A. Sieving** with the 2020 Distinguished Service Award, for his innovative work as a clinician and scientist. The award recognizes individuals or organizations for ongoing notable service to ophthalmology and the Academy.

October 2022: Congratulations to **Min Zhao, M.D., Ph.D.**, was awarded the \$20,000 grant

for the 12022 Wound Healing Society (WHS) Meeting grant. He was presented the award during the inaugural focus meeting for his presentation on Biophysical Control of Wound Healing and Science of Wound Healing. He was the Co-Chair along with Dr. R. Isseroff).

October 2022: The Northern California nonprofit Society for the Blind has honored **Dr. Mark J. Mannis** with the Briggs Award for Excellence in Ophthalmology for his outstanding contributions to the field. Mannis is a distinguished professor and the Fosse Endowed Chair of the Department of Ophthalmology & Vision Science at UC Davis. Dr. Mannis is a nationally and internationally recognized expert in the field of corneal and external eye diseases. He serves on the board of directors for the Society for the Blind. In a written statement, the Society for the Blind said, "Honoring Dr. Mannis with the Briggs Award is one way we can acknowledge all that he has contributed to this field that has helped so many people across our region." The Briggs Award is named for the very first ophthalmologist in the Sacramento area. Dr. William Ellery Briggs and his family moved to Sacramento in the 1870s. He was California's preeminent ophthalmologist for more than fifty years. His descendants established the Briggs Fund in his name several years ago. Society for the Blind is the beneficiary of the fund, which ensures

people can receive low-vision eye care regardless of their ability to pay. Society for the Blind is a full-service nonprofit agency providing services and programs for people who are blind or have low vision. Serving 27 counties in Northern California, the nonprofit, located in Midtown Sacramento, has been serving the Sacramento community for more than 60 years. Each year, nearly half of the patients seen by the Society for the Blind require charity care. With the Briggs Fund, the Society for the Blind has been able to serve more than 300 people who otherwise could not receive low-vision evaluations or occupational therapy.



November 2022: The Department of Defense (DoD) awarded 144 university researchers totalling \$46 million under the Defense University Research Instrumentation Program (DURIP). **Min Zhao, M.D., Ph.D.** one of the DURIP 2022 Award winners for his paper Image Cell Signaling in vivo and ex vivo Spatiotemporally.

December 2022: Dr. Glenn Yiu is now the chair of the Special Emphaiss Panel for the National Eye Institute.

December 2022: Sara Thomasy, D.V.M., Ph.D., D.A.C.V.O. from the UC Davis School of Veterinary Medicine, Eliza Bliss-Moreau, Ph.D. from the California National Primate Research Center, and **Ala Moshiri, M.D., Ph.D.** and **Nick Marsh-Armstrong, Ph.D.** from the UC Davis Health Department of Ophthalmology, in conjunction with Baylor College of Medicine and Devers Eye Institute on being awarded an RO1 grant for around \$3.5 million. The project focuses

on the issues that optic neuropathies due to heritable diseases, glaucoma, trauma, or inflammation are a major cause of blindness in humans, but no effective treatments exist for the vision impairment that occurs with them. The goal of this project is to advance the speed and efficiency of research to improve retinal ganglion cell function, the cells damaged with these diseases, by developing a new nonhuman primate model of autosomal dominant optic neuropathy. This new and better animal model will speed the development and testing of innovative therapies by our team and others that will reduce the morbidity caused by optic neuropathies in humans.

PUBLICATION LIST

JULY 1, 2021, TO DECEMBER 31, 2022

2021

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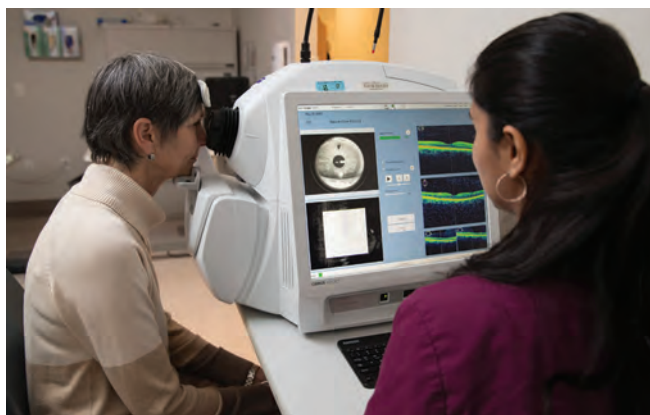
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ALUMNI HIGHLIGHTS



Kimberly Mei Wingses, M.D.

Dr. Kimberly Mei Wingses is an Associate Professor of Ophthalmology and Neurology at Casey Eye Institute, Oregon Health & Science University, in Portland, Oregon. She practices neuro-ophthalmology and comprehensive ophthalmology/cataract surgery at the Veterans Administration Portland Health Care System, where she is Assistant Chief of Surgery for the Operative Care Division.

Dr. Wingses was born in San Francisco and is a third-generation woman physician. Her pediatrician grandmother emigrated from China in 1948 with her grandfather, a diplomat to the United States, and their first-born infant (her mother). Her mother eventually became a pediatric ophthalmologist at the same hospital where her grandmother was the first female and Chinese physician. She studied human biology and astrobiology at Stanford University and worked in space research at NASA, but eventually she found her home in medicine.

She is fascinated by the ways that structure and function align in the eye and brain and was inspired to go into neuro-ophthalmology as a career by the people she met at the first North American Neuro-Ophthalmology Society (NANOS) annual meeting while in medical school. Thanks to a Howard Hughes Medical Student Fellowship between her third and fourth year at New York Medical College, she investigated oligoclonal bands in the cerebrospinal fluid of patients with multiple sclerosis (MS) in a bedside-to-bench project with neuro-ophthalmologists and neuroimmunologists at the

University of Colorado, where her husband was in graduate school.

After graduating New York Medical College, she completed her ophthalmology residency at the University of California, Davis, where she worked on several multiple sclerosis ocular imaging research projects with Dr. John Keltner. Her residency experience is still the foundation of her skills in both medical and surgical ophthalmology, and her sense of family and career purpose. She then pursued a clinical fellowship in neuro-ophthalmology at the University of Iowa. Since 2013, she has practiced as a full-time VA ophthalmologist and faculty member at Oregon Health & Science University. Dr. Wingses teaches medical students, residents, fellows, and support staff. In the past few years, she has become involved in hospital administration as the Assistant Chief of Surgery for the Operative Care Division. In addition to merit and achievement awards from NANOS, AAO, and Portland Magazine's Best Doctors, in 2022, she was awarded the Silver Hammer Award: Residency Teaching Award for Non-Neurology Faculty at Oregon

Health & Science University.

Dr. Wingses' scientific background is in neuroimmunology and ocular imaging research in MS, and she still participates in projects on these topics through OHSU/VA. However, the focus of her recent self-guided research has been studying giant cell arteritis because of proximity: she performs most of the temporal artery biopsies for her hospital system. After shepherding medical students through years of research involving her institution's experience with giant cell arteritis in veterans and comparing it to the community, she more recently started looking at the entire VA experience utilizing big data methodology.

She has served on several medical advisory boards but spends much of her free time in service work for her profession, through educational committees for American Academy of Ophthalmology (AAO), the American Board of Ophthalmology (ABO) as an examiner and liaison to WIO, and the North American Neuro-Ophthalmology Society (NANOS).

As an executive board member of Women in

Ophthalmology (WIO), she has learned much about the interplay between industry, academic medicine, equity work, and all types of ophthalmic practices. She has been afforded professional development and leadership opportunities through women's empowerment organizations such as WIO and the newer Women Professors of Ophthalmology (WPO), which is housed under the Association of University Professors of Ophthalmology (AUPO). Dr. Wings stated, "From parental leave policies in the workplace, to patients increasingly recognizing that the woman in the room might be their doctor rather than the assistant, women physicians



are becoming culturally mainstream. It is surprising, therefore, that we still make up only approximately 25% of the ophthalmology workforce, and women are underrepresented on subspecialty boards, as invited speakers, in departmental chair positions, and across senior faculty and private partnership executive positions."

When thinking about what hurdles she feels women in

health care still face, she stated "there is no one-size-fits-all formula to becoming a successful woman physician, nor what that 'success' looks like for an individual. I have an internal conflict with my own feminism, because within it is the assumption that women have similar experiences because of their sex. Along the gender spectrum, colleagues who are nonbinary, transgender, or questioning are often left out of this conversation." Nevertheless, Dr. Wings expressed that women as a group do still face misogyny, cultural expectations of motherhood and career sacrifice, and sexual harassment. Furthermore, those of different ethnic, socioeconomic, and cultural backgrounds may have wildly different experiences with discrimination than others. Thus, she feels the challenge we still face is to figure out how we can address these individual nuances on a societal level.

Some advice Dr. Wings would like to offer young ophthalmologists who are still in training or who are just beginning their careers: "Don't let anyone pigeon-hole you into a specific field or type of practice. I was originally told neuro-ophthalmology wasn't for surgeons, and great surgeons wouldn't be happy in a medical subspecialty. But I absolutely love cataract surgery and the complexities of neuro-ophthalmic disease. It's ok to be good at and enjoy both." She feels that trainees should "explore every style of practice you can during training to give you the best fit, and ultimately listen to your gut. Be open to

who you want to work with, not just where that work is housed." She stated she hadn't originally considered working at a VA hospital, yet she finds herself more invested with time, because it gives her the opportunity to provide unique services to a grateful patient population, it offers continuous career growth in an institution with an aspirational mission, and it keeps her connected to a rich academic community with resident education as a central focus.

Dr. Wings firmly believes that if you love something that is greatly needed and serves a unique purpose, you will have a fulfilling career and never be out of a job. She loves being needed by her colleagues for difficult cases. She takes pride in taking the time to listen to patients and invest time and energy into their care. She receives positive feedback from her patients that fuels her day. A final thought Dr. Wings would like to leave you with is "don't underestimate the power of volunteering in ophthalmology, which connects you to a professional family with a strong sense of purpose, belonging, and contribution to the larger medical community. This service work has created fulfillment in my career beyond my expectations, and it connects me with others who can support me when I face professional challenges."

She lives in Portland, Oregon with her husband, an astronomer-turned-energy science entrepreneur, 2 boys in elementary school, and 2 lab mixes. ■

LEADERSHIP



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



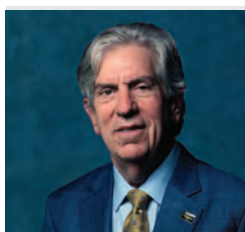
James D. Brandt, M.D.
Daryl and Opal Geweke
Endowed Chair in Glaucoma
Vice Chair of International
Programs & New Technology
Professor, Glaucoma
Director, Glaucoma Service
Director, Glaucoma Fellowship



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



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



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



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



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



Jenny Chen, M.D.
Chief, Eye Care Sacramento Division
Veterans Affairs, Sacramento
Valley Division
Assistant Professor, Comprehensive
Ophthalmology
Assistant Professor, Glaucoma



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



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



Rebecca Chen, M.D.
Assistant Professor, Glaucoma



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

CLINICAL FACULTY, CONTINUED



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



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



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



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



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



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



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



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



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



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



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



Ala Moshiri, M.D., Ph.D.
Professor, Retina



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



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



Benjamin Jastrzembki, M.D.
Pediatric Ophthalmologist

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



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



Jenny Chen, M.D.
Chief, Eye Care Sacramento Division
Veterans Affairs, Sacramento
Valley Division
Assistant Professor, Comprehensive
Ophthalmology
Assistant Professor, Glaucoma



David Chu, M.D.
Comprehensive and
Cataract Surgery
Veterans Affairs,
East Bay Division



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



Linda Margulies, M.D.
Chief, Eye Care Services
Veterans Affairs,
Northern California Health
Care System
Vitreoretinal Diseases



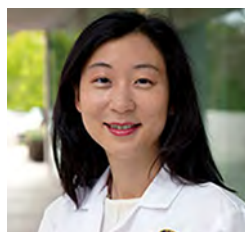
Alexander Vu, M.D.
Comprehensive and Cataract
Surgery
Veterans Affairs, Sacramento Valley
Division



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.
Senior Optometrist



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



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



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



Jenny Truong, O.D.
Optometrist



Lauren Guajardo, O.D.
Optometrist



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



Jonathon Ross, O.D., M.S., F.A.A.O.
Principal Optometrist



Hai Tong, O.D.
Senior 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



Nicholas Marsh-Armstrong, Ph.D.
Daryl and Opal Geweke Endowed
Chair in Glaucoma Research
Professor
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
Visiting Professor
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.
Associate Professor,
Vision Science and Advanced
Retinal Imaging



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.
Assistant Professor
Research Interests:
Retinal imaging, adaptive optics,
optical coherence tomography



Zeljka Smit-McBride, Ph.D.
Associate 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, Dermatology and
Ophthalmology,
Institute for Regenerative Cures
Research Interests:
Electrically stimulating cell
migration in corneal wound
healing and neuron regeneration

FELLOWS



Samuel Feldman, M.D.
Clinical Retina Fellow 2023



Michael Gale, M.D.
Clinical Glaucoma Fellow 2024



Lillian Tran, M.D.
Clinical Cornea Fellow 2024



Cristy Ku, M.D., Ph.D.
Clinical Retina Fellow 2024



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

RESIDENTS



Saumya Copparam, M.D.
Fourth Year Resident 2023



Kiran Malhotra, M.D.
Fourth Year Resident 2023



Benjamin West, M.D.
Fourth Year Resident 2023



Denis Huang, M.D.
Third Year Resident 2024



Matthew Javitt, M.D.
Third Year Resident 2024



Andrew Nelson, M.D.
Third Year Resident 2024



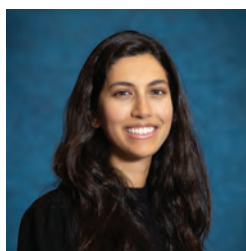
Blake Snyder, M.D.
Third Year Resident 2024



Abraham Hang, M.D.
Second Year Resident 2025



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



Ketaki Panse, M.D.
Second Year Resident 2025



Manpreet Tiwana, M.D.
Second Year Resident 2025



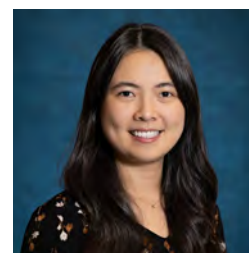
Pelin Celiker, M.D.
First Year Resident 2026



John Mark, M.D.
First Year Resident 2026



Andy Shao, M.D.
First Year Resident 2026



Christine Xu, M.D.
First Year Resident 2026

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

Sukhjit 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

Linda Margulies, M.D.
Clinical Professor

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

Ernest Tark, M.D.
Clinical Professor, Emeritus

David Telander, M.D., Ph.D.
Clinical Instructor

Alexander Vu, M.D.
Assistant Clinical Professor

Tiffany Wong, M.D.
Assistant Clinical Professor

Michael Yen, M.D.
Assistant Clinical Professor

John Zeiter, M.D.
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.



Christopher J. Murphy, D.V.M.

Dr. Christopher Murphy was appointed as a faculty member to the UC Davis Eye Center in 2009. Originally from New York, Dr. Murphy received his BS in Biology from Cornell University, a DVM and PhD at Cornell University, and his Comparative

Ophthalmology residency at UC Davis. He was the first trainee to complete a Cornea Fellowship under the mentorship of Dr. Mark Mannis at UC Davis. Dr. Murphy spent 18 years at the University of Wisconsin-Madison, rising through the ranks to full professor before returning to UC Davis. During this time, he founded the largest multiphasic phacoemulsification training course in US at the University of Wisconsin-Madison in the School of Medicine. Over the course of his career, Dr. Murphy has made countless contributions to the fields of comparative ophthalmology, visual optics, bioengineering, biomaterials, translational therapeutics and many more. Dr. Murphy has made a significant

impact in ophthalmology and vision science through his entrepreneurial pursuits. Through his entrepreneurial entities, he has brought multiple ocular therapeutics to market with treatments for highly prevalent ophthalmic conditions including age-related macular degeneration (Lucentis®, EYELEA®) and dry eye disease (Xiidra®). Over the past 30 years, Dr. Murphy has mentored numerous faculty members, graduate students, postdoctoral fellows, scientists, physician and veterinary ophthalmology residents and fellows, and undergraduate students, and his contributions will continue through successes of his trainees. During his academic career, Dr. Murphy received numerous honors and awards, most recently the UC Davis Health Eye Center 2022 Alumnus of the Year Award and the 2023 Alumni Achievement Award from UC Davis School of Veterinary Medicine. Upon retirement, Dr. Murphy will continue to move full speed ahead with his entrepreneurial endeavors and continue to provide mentorship to his academic colleagues. Importantly, he plans to spend time with his family and going on hunting and fishing excursions with his dog Ember.

FACULTY ANNOUNCEMENTS



Kareem Moussa, M.D. Associate Professor, Retina

Congratulations to Dr. Kareem Moussa who was recently promoted to Associate Professor in Retina. He is a vitreoretinal surgeon at UC Davis Eye Center with a special interest in ocular infection and inflammatory diseases.

A Proud Aggie, he received his undergraduate education at UC Davis, where he majored in biochemistry & molecular biology. He received his M.D. from Duke University School of Medicine, and

completed ophthalmology residency at University of California, San Francisco (UCSF). Dr. Moussa developed a keen interest in diseases of the retina while in residency at UCSF and completed additional training in vitreoretinal surgery at Harvard Medical School's Eye and Ear and uveitis at UCSF's Proctor Foundation. He joined the UC Davis Eye Center faculty in March of 2022. He is honored to work at the UC Davis Eye Center and looks forward to continuing the center's mission of providing world-class eye care, educating the next generation of physicians, and advancing our knowledge of diseases of the eye.

NEW FACULTY



Rebecca Chen, M.D. joined the UC Davis Eye Center as an assistant professor in ophthalmology. Dr. Chen specializes in the diagnosis and medical and surgical management of glaucoma in both adults and children. She performs

glaucoma laser and incisional surgeries, including minimally invasive glaucoma surgeries (MIGS), and cataract surgery. Her research interests include surgical outcomes of glaucoma procedures and the relationship of ocular biometry to glaucoma pathophysiology. Originally from Fremont, California, she completed her undergraduate studies and medical education at Case Western Reserve University, where she graduated with her M.D. with distinction in research. She completed her ophthalmology residency at the Cleveland Clinic Cole Eye Institute, where she served as Chief Resident. She completed glaucoma fellowship training at the Bascom Palmer Eye Institute in Miami, Florida. She is a former recipient of the Heed Ophthalmic Fellowship Award. Dr. Chen is honored to join the faculty, where she looks forward to continuing the mission of providing world-class eye care, educating the next generation of ophthalmologists, and advancing our knowledge of ocular diseases.



Benjamin Jastrzembki, M.D. has been appointed as a Pediatric Ophthalmologist at the UC Davis Eye Center. He grew up in Hanover, New Hampshire. He completed undergraduate studies at Dartmouth College and

graduated Phi Beta Kappa. He then completed a Fulbright scholarship in Nicaragua studying anthropology. He attended medical school and ophthalmology residency at Harvard. Subsequently, he completed his pediatric ophthalmology and strabismus fellowship training at the Hospital for Sick Children at the University of Toronto. Following his training, he served as an attending physician at Boston Children's Hospital from 2019 to 2023. Dr. Jastrzembki is an active in the Pediatric Eye Disease and Investigation Group (PEDIG) and serving as co-chair for the upcoming Amblyopia Treatment Study 24 randomized clinical trial.

NEW OPTOMETRISTS



Welcome Optometrist Tina Zeng, O.D. who started with us in February 2022. She is based in the Sacramento and Folsom clinics. Dr. Zeng specializes in neuro-ophthalmic diseases and primary care optometry. She

will be seeing optometry patients that consist of routine exams and contact lenses, as well as any patients that have concurrent neuro-ophthalmic conditions. She is a graduate of the University of California, Berkley and the University of California, Berkeley School of Optometry. She completed her residency program at the Eye Institute of Pennsylvania.



Welcome Jenny Truong, O.D.

who joined our optometric team in January 2022. Dr. Truong is a graduate of the University of California, Los Angeles and the University of California, Berkeley School of Optometry. She began

working at UC Davis at the Student Health Center and became part of the hospital-based team late 2022. Dr. Truong works at both the Davis and Sacramento offices as an integral part of our primary eyecare team.



Welcome Optometrist Larisa Johnson Tong, O.D., F.A.A.O., who re-joined us in December 2022. Dr. Johnson specializes in medically necessary contact lens fittings, infant contact lens exams and primary care optometry.

She is a graduate of the University of California, Berkeley School of Optometry and completed her residency program at University of California, Los Angeles. Dr. Johnson sees patients of all ages at the Folsom and Sacramento offices.

EVENTS UPDATES

October 2022: Thanks to the ongoing support of Ann Kohl, the J. William Kohl Summer Scholarship for medical students continues to be an important 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 and 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 2022 cycle and was able to extend an invitation to 8 young researchers. This opportunity provides a 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. Past and present participants have moved forward with applications to ophthalmology residency and 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.

October 2022: Dr. Glenn Yiu and Dr. Susanna Park presented during the Retina subspecialty day at the American Academy of Ophthalmology (AAO).

October 2022: The Paul Hom Asian clinic annual health fair returned. The event was held at the UC Davis Health Campus and is a Health Fair offered to the community to provide education about things like eye diseases, diabetes, cancer

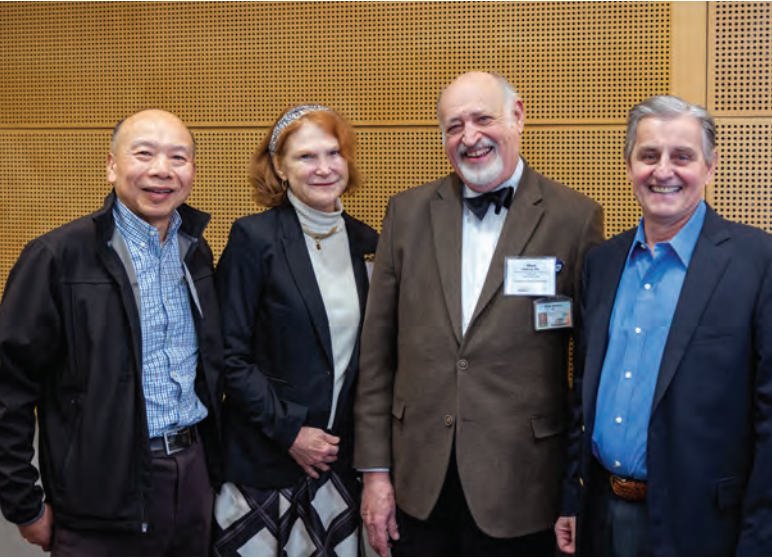
awareness, etc. As part of the health fair, the Department of Ophthalmology & Vision Science held an eye screening clinic which was run by the UC Davis Eye Center undergraduates and medical students. Dr. Glenn Yiu and Dr. Michele Lim were the co-directors of the event.

October 2022: UC Davis Eye Center sponsored a successful Inaugural Scientific Meeting of the Wound Healing Society, together with Dermatology. The Wound Healing Society (WHS) is the premier national scientific organization focused on wound healing. The WHS has initiated focused meetings on the science of wound healing and charged Dr. Rivkah Isseroff (Dermatology) and Min Zhao (Ophthalmology and Dermatology) for the inaugural meeting.

Paul Hom Clinic



Wound Healing Conference



In the challenging time of the pandemic, after being postponed for over two years from the originally planned meeting in 2020, the WHS Scientific Inaugural Meeting became a reality on October 27-28, 2022. This two-day national meeting was held at the UC Davis Medical Center, in Sacramento, California. This inaugural meeting has a theme of Biophysical Control in Wound Healing, emphasizing multidisciplinary, interactive, diverse, and inclusive, and encouraging junior researchers to join the wound healing research and participate in the WHS events. The meeting had sessions focusing on Biomechanical, Bioelectrical, Shock Waves and Biomaterials, BioElectroceuticals, and Photomodulation. Dr. Mannis introduced the Keynote speaker Dr. Kevin Tracey, a leader and a pioneer of bioelectronic medicine. A unique session on Bio-electroceuticals in Ophthalmology

was moderated by UC Davis Eye Center alumni Dr. Kim Gokoffski. Dr. Paul Sieving presented the remarkable effect of electrical stimulation on viral transfection in the retina. Dr. Mark Mannis presented a very interesting overview of the history of electroceuticals in ophthalmology. Dr. Gokoffski and her student reported exciting progress in exciting optical nerve regeneration induced by electrical stimulation. Dr. Nakajima presented his work on the electrophysiology of the cornea. The program purposefully gave junior researchers, including graduate students, postdoctoral, residents and fellows, and junior faculty members to speak together with senior researchers including members of the National Academy, and senior professors. The junior speakers also had the opportunity to sit next to the leaders in the field as Panel members to respond to and interact with the audience. Attendees included well-proportioned male and female presenters, and speakers, under representative groups (African American, Hispanic, Latinos, and others). The total attendance of the meeting is 71 registered attendees, with 26 abstract submissions from which 20 were selected for poster presentations. Overseas attendees were from Sweden, Austria, and Brazil. All selected poster presentations have been given podium speaking opportunities – from 15-minute short-talk to 5 minutes of rapid-fire talks. Drs. Balaji, Soulika, and Arany led the poster prize selection. The five prizes (young investigator travel awards, and poster prize) were presented to three females, and two males, including one Latino, and one first-generation college graduate. Attendees enjoyed this in-person meeting, the venue, the program, and the logistics provided by the Eye Center staff, Kimber Chavez who led the very capable team of Rebecca Subbotin, Bhupinder Dhillon, and volunteer students to make the meeting highly praised by the attendees. As local organizers, we are happy that the meeting concluded successfully, and we are very grateful for the WHS' vision. Financial support from the Department of Dermatology and Department of Ophthalmology is gratefully acknowledged. ■

In Memoriam

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



ALAN M. ROTH, M.D.

OCTOBER 16, 1932 - DECEMBER 28, 2021

Alan M. Roth, M.D., passed away on December 28, 2021, at the age of 89. Dr. Roth was a former UC Davis faculty member, having joined the then-new Department of Ophthalmology in 1972. Before his passing, we celebrated Dr. Roth for establishing the Barbara A. and Alan M. Roth, M.D. Endowed Chair in November 2021. With a long career as a comprehensive ophthalmologist, he delivered care to his patients and, as an ocular pathologist, determined the causes of disease at the microscopic level. Dr. Roth distinguished himself as a clinician, pathologist, and teacher. Originally from New Rochelle, New York, he spent part of his childhood in Pelham Parkway in the Bronx. The son of an optometrist, Dr. Roth attended New York University and the School of Optometry at Columbia University. He graduated in 1954 and entered the U.S. Army as an optometrist. Dr. Roth went on to earn his M.D. at New York State University at Syracuse and completed his internship and residency in ophthalmology at the Long Beach VA Hospital. He spent time at the Jules Stein Eye Institute at UCLA and completed a three-year residency in general pathology. Dr. Roth

initiated Ophthalmic Pathology at UC Davis. Dr. Roth officially retired in 1997 but continued to work part-time seeing patients and serving as a pathologist and teacher. Dr. Roth's late wife, Barbara, a trained orthoptist, passed away in 2014. Dr. Roth felt it was important to support the future growth of the Eye Center with philanthropic investment. In addition to the endowed chair, Dr. Roth established the Alan and Barbara Roth Ophthalmic Pathology Laboratory in the new Ernest E. Tschannen Eye Institute. Dr. Roth devoted his time to enjoying music, watching Giants baseball games, and traveling. He will be greatly missed.



BARBARA MARIE FINGERUT

APRIL 6, 1933-JANUARY 18, 2023

Barbara was a remarkable woman, and many would think of her as a “force of nature.” Wherever she went, whether it was a fundraising event or just lunch out at a local restaurant, she always knew people and would hold court while they gathered around to hear her stories and laugh at her sassy sense of humor. She was beloved and respected by so many.

Barbara was born in Denver, Colorado, to parents Joseph and Sylvia and was elder sister to Connie.

Barbara retired from Wells Fargo Bank after 45 years, serving as the manager in the Sacramento and Roseville branches. She was a successful woman in what was then a “man’s world,” and she conquered the challenge very successfully.

Known as Bogey Babs, Barbara was an avid golfer and, enjoyed traveling to Mexico with friends to golf and looked forward to her annual “Girl’s golf trip to Arizona” with her close friends. In addition to her golfing pleasures, Barbara also volunteered as the head scorekeeper for several years for the Raley’s PGA Senior Professional Golf tournament at Serrano Country Club in El Dorado Hills, CA.

Barbara and her late and dear husband Stan loved to travel. They enjoyed their annual November trip to Hong Kong, Singapore, Thailand and also enjoyed multiple trips to Australia, Scotland, London, Spain, New Zealand and South Africa. One of their highlights was playing golf during their travels.

Her lifestyle changed dramatically after a tragic automobile accident in 2012. While no longer able to play in charity golf tournaments, she would still support them and attend the dinner or reception afterward. She attended as many events as she could, even up until her final months, enjoying every minute of socializing with her friends and giving back to her community.

Barbara served on several boards at UC Davis Health and was a generous donor to several of their programs: UC Davis Eye Center, UC Davis Comprehensive Cancer Center, Betty Irene Moore School of Nursing, and the Pain, Cardiology, Orthopedic, Stem Cell and Urologic Surgery departments as well as women’s golf and softball programs within the Athletics Department. Barbara will be remembered for her leadership and her amazing generosity. She was very proud of her contributions to UC Davis and was truly a beloved member of the UC Davis family.

She had a passion for enriching the lives of youth, which she did through her generous contributions to Hillel at Davis and Sacramento, and her generous support of Cristo Rey High School.

Barbara leaves behind many people who loved her: her sister, Connie; her niece, Denise; and her cousin, Larry, whose calls she always looked forward to. She had many wonderful caregivers over the years, and many others who looked after her including her dear friends, Kathy Lopez and Erin Bauer, the amazing team of hospice nurses, and all the physicians who cared for Barbara over the years. A special thank you to Dr. Mark Mannis, who cared for her as a physician and friend, and his wife, Judy, who kindly made Barbara wonderful meals for holidays and other occasions and spent countless hours visiting with Barbara.



DR. HENRY GO

DECEMBER 28, 1933 - MARCH 16, 2023

Dr. Henry Go, peacefully passed away in his Delta home on March 16, 2023, with his muse Barbara, by his side. Henry was the Delta doctor for 60+ years and was known as the doctor – and trusted friend – who would never rush a conversation or dismiss a concern.

Henry was at his happiest with Barb by his side, and jook in his bowl, surrounded by family, Rosie and Greg, and their children Sami and Lee; Adrienne and her children Adelaide and Clementine; and Lisa and Gonzalo, and their children Mateo and Melia. Dr. Go was always a welcome and joyous presence at UC Davis Eye Center meetings and events, and a great supporter of the mission of the department. Dr. Go will be dearly missed by all those fortunate enough to be part of his life.

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With gratitude to the following donors who have provided sustaining support to the UC Davis Eye Center since its inception.

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**We will correct our records
immediately.**

SOCIETY FOR THE BLIND ACQUIRES BRAILLE PRODUCTION CENTER

BY SHARI ROESLER, EXECUTIVE DIRECTOR

Society for the Blind, (Society), recently acquired the Braille production services operated by the Sacramento Braille Transcribers, (SBT). This is a win-win for both Society and SBT as well as for people living with vision loss and blindness. The board of Sacramento Braille Transcribers made the decision in late 2021 to look for a partner to



take over the Braille production services. “We contacted Society for the Blind and after initial conversations, both boards of directors approved moving forward with the merger,” said Adam Elshama, a former member of SBT’s board. “Our respective missions are so closely aligned that we knew this was the right next step.”

We are looking forward to adding Braille production services at

Society for the Blind and in so doing, continuing the legacy of SBT and the many Braille transcribers who provided textbooks, manuals, newsletters and so many other materials for more than sixty years. In addition, Society is creating an employment training program so our students can pursue a career as a certified Braille transcriber or pursue a career in the sales and production side of the program.

Despite the availability of electronic reading materials, Braille continues to be an essential literacy skill for children and adults living with low vision and blindness. Today, fewer than 10% of children with vision loss are literate. They are not learning Braille and are unable to read, write, and comprehend. By third grade they are significantly behind their sighted peers and 50% of high school students, who are blind, drop out before graduating.

Dr. Nandini Gandhi, Chief of Pediatric Ophthalmology at UC Davis, noted that, “children need to learn Braille early. Braille literacy teaches children how to compose sentences, read and comprehend, and communicate

effectively. We are thrilled to know that our community partner, Society for the Blind, will be providing essential Braille learning materials, because literacy is the key to improving academic outcomes and pointing these children towards college and careers.”

Society’s Braille Production and Training Program will be one of the only Braille production centers in northern California.

More than 5,000 people receive services each year at Society for the Blind. ■

SOCIETY FOR THE BLIND

More than what you see



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 Erin Bauer at (916) 730-1941 or email ejbauer@ucdavis.edu today!

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
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- ✓ Charitable Gift Annuity
- ✓ Charitable Lead Trust
- ✓ Pooled Income Fund
- ✓ Gifts of Real Estate
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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

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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.

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.



Photo credit: Fred Greave

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.



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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*!

UCDAVIS HEALTH | Eye Center

NAPA EYE 2023
MAY 19-21, 2023
FRIDAY - SUNDAY

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

UCDAVIS HEALTH | Eye Center

SAVE THE DATE

NAPA EYE 2024
MAY 3-5, 2024
FRIDAY - SUNDAY

MARK YOUR CALENDAR!

For more information, please contact: Kimber Chavez | KLChavez@ucdavis.edu | 916-734-7781

<https://health.ucdavis.edu/eyecenter/cme/2023/2023-napa-eye.html>