

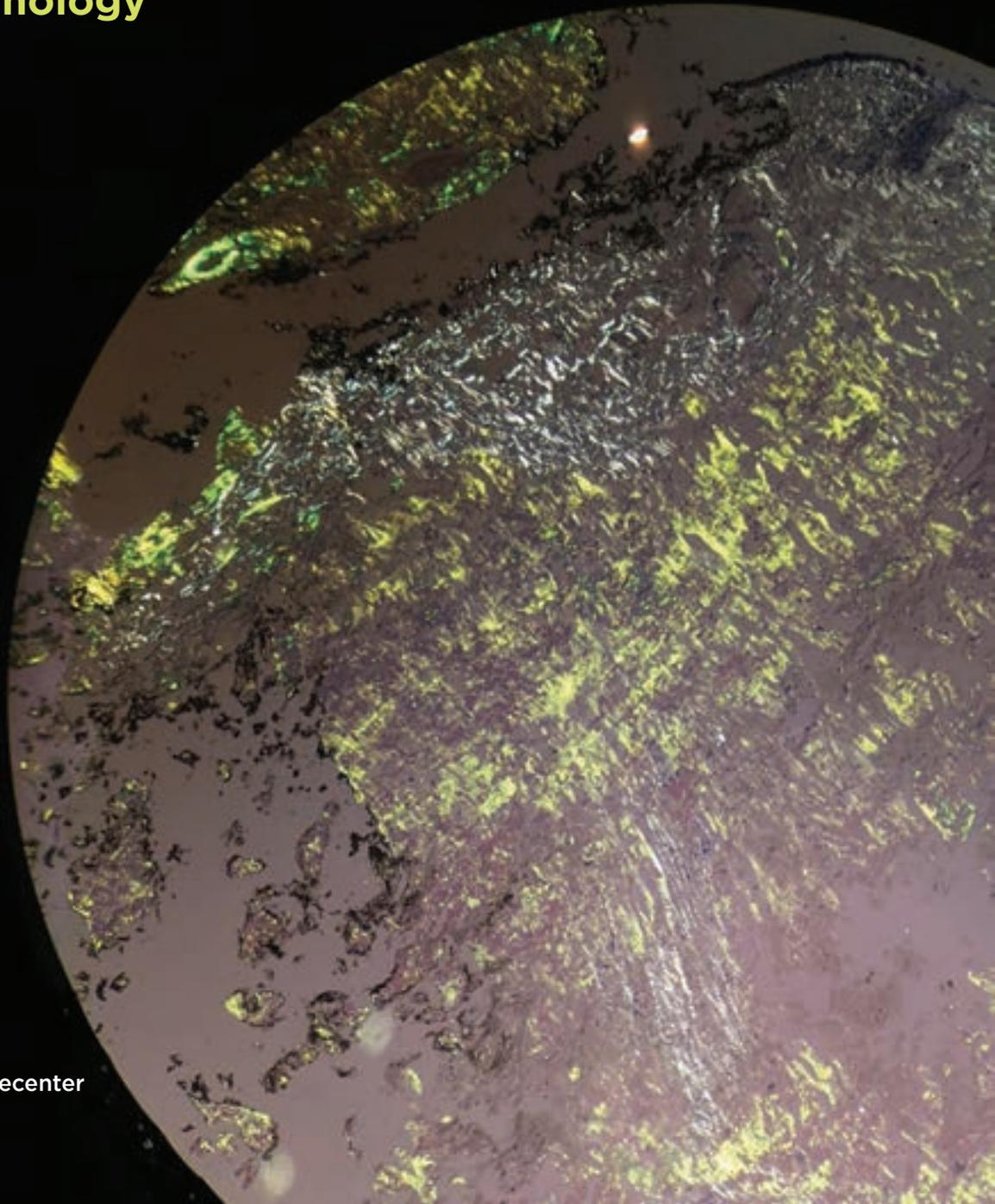
Summer 2018

# enVISION

News from the UC Davis Eye Center

## EXPLORING INNER SPACE

**Ophthalmic Pathology  
at UC Davis**



[www.ucdmc.ucdavis.edu/eyecenter](http://www.ucdmc.ucdavis.edu/eyecenter)

 UC Davis Eye Center

# UC DAVIS EYE CENTER

## 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.

## 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.

cover photo:  
Conjunctival Amyloidosis (Esther Kim, M.D.)

# enVISION

News from the UC Davis Eye Center

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# From the Chair's Desk

What distinguishes academic ophthalmology from the private practice of our specialty is largely the research enterprise that is central to academic life. While we aspire to provide the most sophisticated and highest level of care to our patients, in addition, we invest time, energy, and resources in new discovery. In this issue of *enVision*, we focus on the subjects of ophthalmic pathology and the new frontier of gene therapy.

Ophthalmic pathology has always been at the center of our understanding of basic disease processes, and although not a patient care specialty per se, ophthalmic pathology is crucial to all practitioners of our specialty. The long history of ophthalmic pathology at UC Davis has been central to our mission as a department, and we are very proud that Esther Kim, MD is carrying on the tradition of pathology established early in the history of the Eye Center by Alan Roth, MD.

And while pathology is an old and venerated discipline in ophthalmology, gene therapy is a burgeoning new technology that is on the brink of numerous important diagnostic and therapeutic discoveries. We are pleased that

members of our faculty are fully engaged in the exploration of genetic diagnoses and therapeutic interventions. This endeavor promises hope to many patients with diseases that have, until now, been untreatable.

As such, we plan to build on the insights provided by our clinical pathologists and to move into the future with the guidance of our geneticists to the benefit of the many patients who turn to UC Davis for the highest level of expertise and for whom we care day to day.



**Mark J. Mannis, M.D., F.A.C.S**  
Fosse Endowed Chair in Vision Science Research  
Professor and Chair  
Department of Ophthalmology & Vision Science  
University of California, Davis Eye Center



## UC DAVIS EYE CENTER

### Executive Advisory Council 2018-2019

## our mission

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 cutting-edge research for the world.

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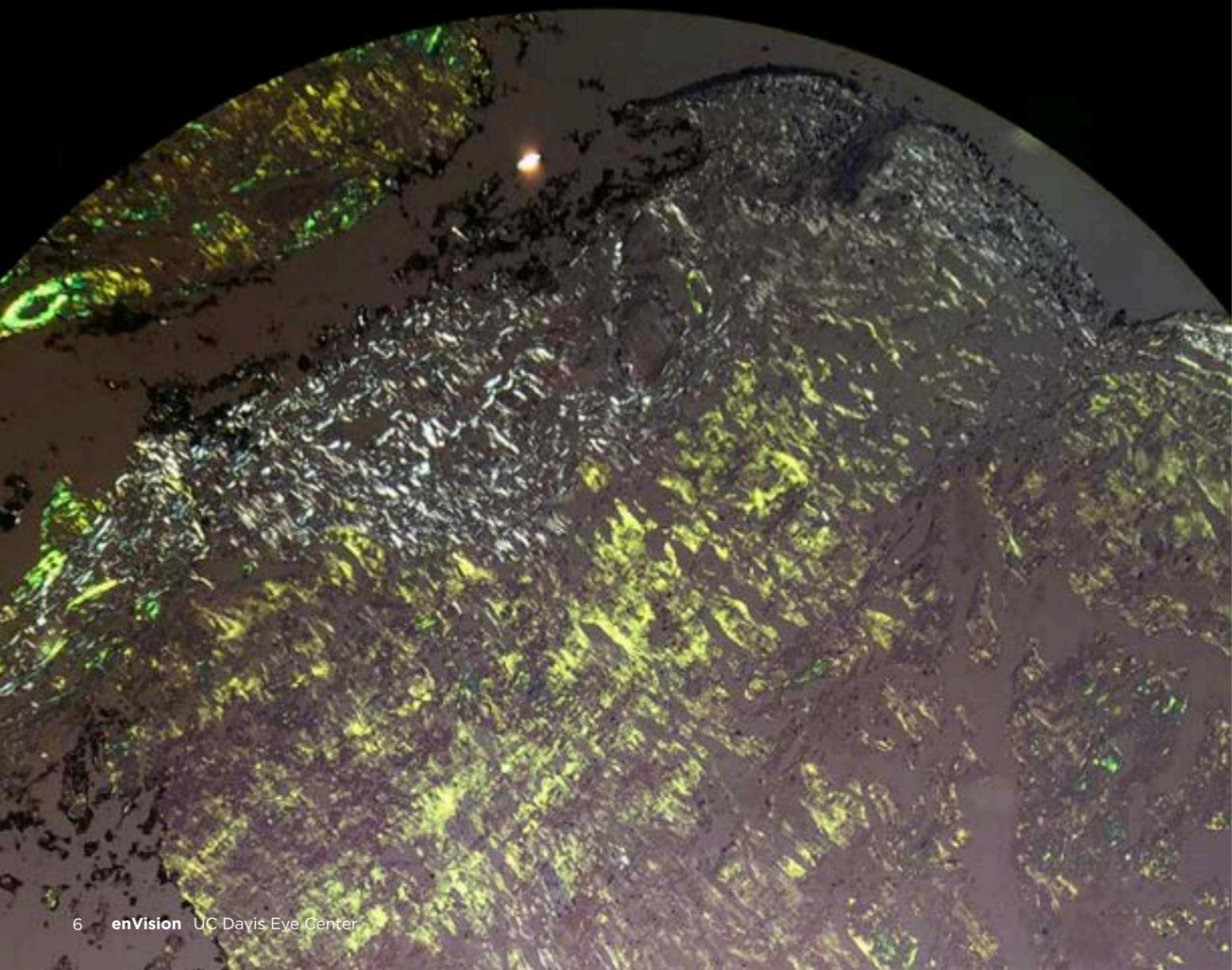
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# EXPLORING INNER SPACE

## Ophthalmic Pathology at UC Davis

**pathology** |pəˈTHäləjē| noun: the science of the causes and effects of diseases, especially the branch of medicine that deals with the laboratory examination of samples of body tissue for diagnostic or forensic purposes.



Pathology has become established as a distinct branch of medicine on which physicians in all areas of clinical practice rely. The pathologist employs tissue or laboratory specimens to definitively diagnose a broad array of diseases. We all know people who have undergone a biopsy or have had blood or other fluids collected for examination. It is the pathologist who examines these specimens under the microscope or employs a variety of testing techniques in order to provide the clinician with a definitive diagnosis.

Ophthalmic pathology is, likewise, a distinct subspecialty of ophthalmology with a venerated history. There are currently at least two major U.S.-based organizations that foster the science of ophthalmic pathology: The American Association of Ophthalmic Pathologists and the Verhoeff-Zimmerman Society. The former includes among its members board certified academic ophthalmologists and pathologists as well as individuals certified in both specialties who practice, teach, and engage in research in ocular oncology or ophthalmic pathology. The Verhoeff Zimmerman Society is an organization founded over 60 years ago in the United States for individuals with expertise and interest in ophthalmic pathology.

What differentiates the “ophthalmic pathologist” from other general pathologists is not only that the focus is specifically on eye disease, but also that the majority of ocular pathologists are also practicing clinicians. A good number practice with a special interest in ocular oncology—tumors of the eye and surrounding tissues. But ophthalmic pathologists are counted in a wide variety of ophthalmic specialties including oculoplastic surgery, vitreo-retinal

disease, cataract surgery, cornea and external disease, and neuro-ophthalmology among others. As such, the ophthalmic pathologist enjoys the unique experience of providing both direct patient care as well as engaging in inquiry in the pathology laboratory.

The ophthalmic pathology program at UC Davis was initiated by Dr. Alan Roth (See *EnVision*, Spring/Summer 2017) who joined the faculty of the then new Department of Ophthalmology at UC Davis in 1972 after completing his training in ophthalmic pathology at the UCLA Jules Stein Eye Institute with pathologist, Bob Foos. In the early years of his practice, Dr. Roth processed his own specimens. During this period, in addition to practicing laboratory ophthalmic pathology and teaching pathology to the residents, he also conducted an active general practice in ophthalmology and supervised our residents in cataract surgery for many years. (Fig 1A-B)

Eventually, Dr. Roth engaged the Department of Pathology and Laboratory Medicine at UC Davis to partner with the Eye Center in processing the specimens, while he retained the responsibility of doing the path read-outs. This partnership further flourished after Dr. Roth’s successor,

FIG 1A



FIG 1B



FIG 2

Esther Kim, strengthened this partnership with a strong collaborative effort. Dr. Lydia Howell, Chair of the Department of Pathology and Laboratory Medicine (Fig 2) views this alliance with great enthusiasm:

*“The partnership between our two departments is a wonderful example of the collaborative multi-disciplinary environment at UC Davis Health. By bringing together the professional and technical expertise from each of our specialties, we are able to provide the very best care to our patients and a wonderful learning environment for our trainees. This collective excellence is what makes us special.”*

Dr. Roth’s retirement from active clinical practice in 1994 left a void in the department.

However, Esther Kim, MD—a former UC Davis eye resident and a current faculty member—decided to take a sabbatical and train in ophthalmic pathology in preparation for the second phase of her career. Dr. Kim is also Director of the Comprehensive Ophthalmology Service and practices general ophthalmology with one of the busiest services in the department. A skilled and prolific cataract surgeon, she took a year to study with Michele Bloomer at the University of California, San Francisco in 2014-2015 and returned to UC Davis as our ophthalmic pathologist. (Fig 3) Dr. Kim works closely with the Department of Pathology and Laboratory Medicine and regularly consults with Dr. Roth, calling on his broad expertise.

In addition to the lecture series that Dr. Roth conducted over many years, and the teaching at the microscope that both Drs. Roth and Kim provide



FIG 4A

**“Dr. Smith not only visits our department once or twice yearly, but also teaches our residents ocular pathology via teleconference on a regular basis, providing interactive sessions in all areas of ocular pathology.”**

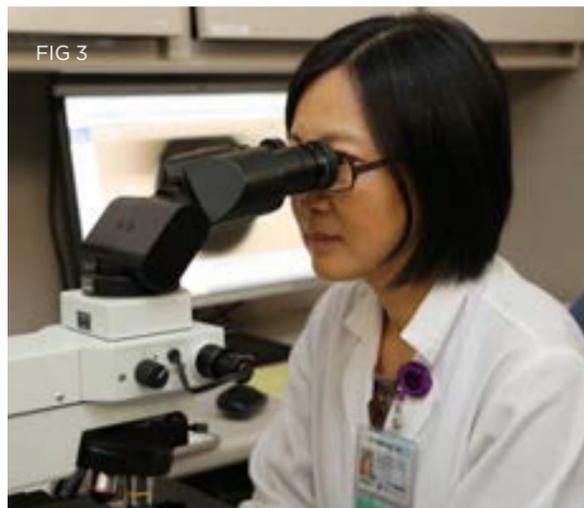


FIG 3

**What differentiates the “ophthalmic pathologist” from other general pathologists is not only that the focus is specifically on eye disease, but also that the majority of ocular pathologists are also practicing clinicians.**

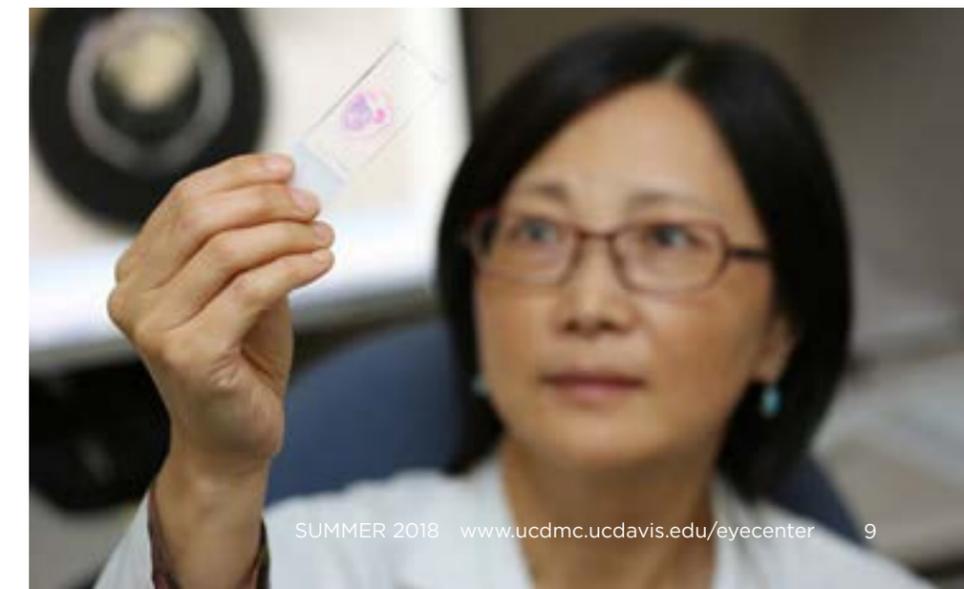
our residents, we have also engaged the services of Morton E. Smith, a renowned ocular pathologist from Washington University in St Louis. Dr. Smith not only visits our department once or twice yearly, but he also teaches our residents ocular pathology via teleconference on a regular basis, providing interactive sessions in all areas of ocular pathology (Fig 4) Dr. Smith emphasizes that since ocular pathologists are also generally clinicians with regular patient contact, they understand disease context in a special way. And, he points out, “the pathologist—both ophthalmic and general—understand disease at the most basic level.”

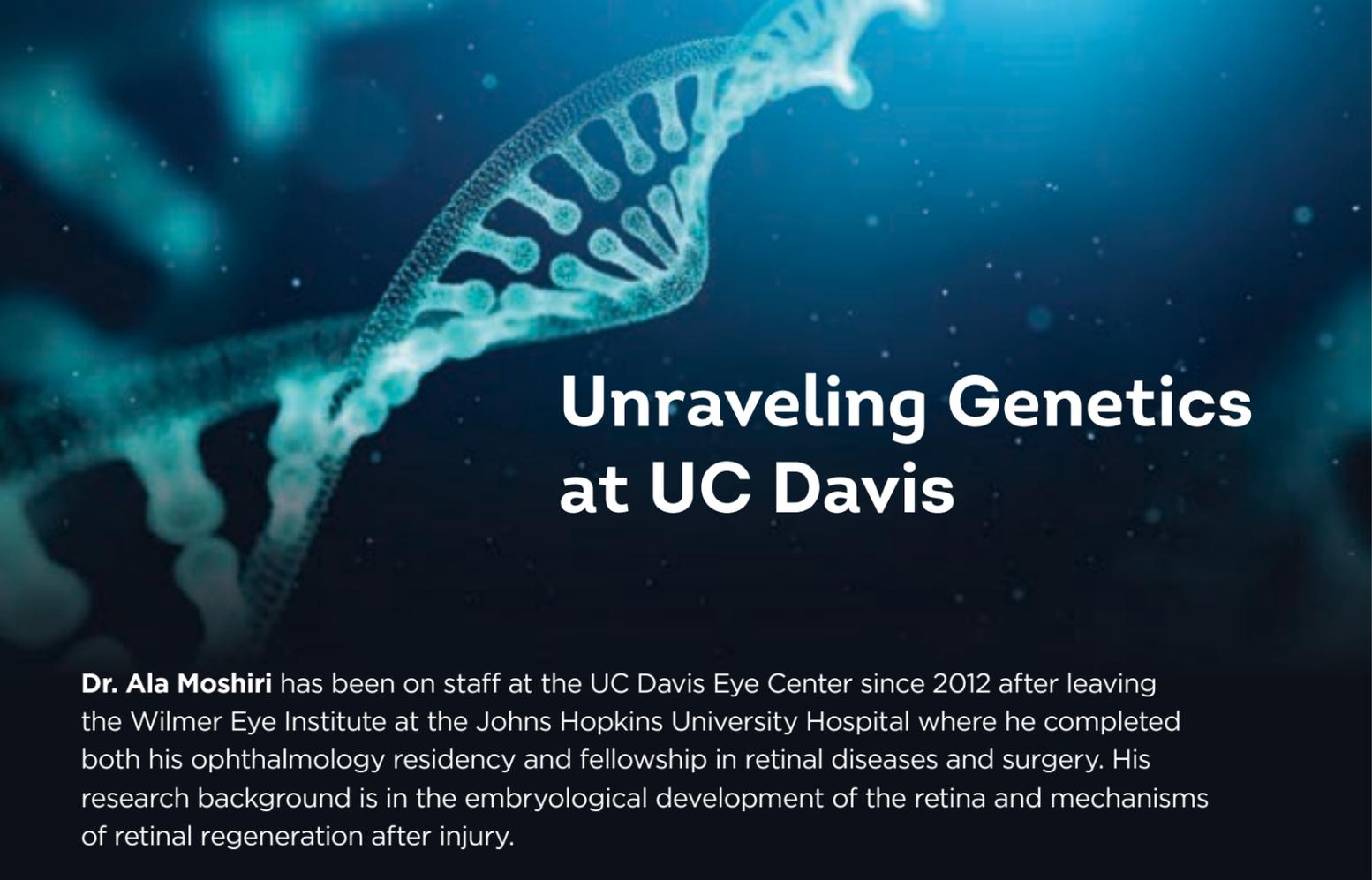
While not every department of ophthalmology is fortunate to host an ophthalmic pathologist, UC Davis has recognized the importance of this discipline in its function as a referral center. As we move closer and closer to the

world of personalized medicine, the role of the pathologist will become even more central to contemporary health care. Dr. Alan Roth has invested in the future of ophthalmic pathology at UC Davis by gifting the Eye Center the funds to establish the *Alan and Barbara Roth Ophthalmic Pathology Laboratory* in the new Eye Center Building. We look forward to a bright future as we build on all we have learned from our colleagues in ophthalmic pathology. ■



FIG 4B





# Unraveling Genetics at UC Davis

**Dr. Ala Moshiri** has been on staff at the UC Davis Eye Center since 2012 after leaving the Wilmer Eye Institute at the Johns Hopkins University Hospital where he completed both his ophthalmology residency and fellowship in retinal diseases and surgery. His research background is in the embryological development of the retina and mechanisms of retinal regeneration after injury.

**In addition to treating patients with the full spectrum of retinal diseases** and performing all forms of retinal surgery, Dr. Moshiri teaches residents and retinal fellows in the clinic and operating room. Since joining UC Davis, his research focus has been on developing mechanisms of restoring retinal function in his patients. The goal of restoring retinal function has a two-pronged approach: 1) Discovering, replacing, and repairing retinal disease genes, and 2) Exploring strategies of stem cell replacement of retinal tissue.

Dr. Moshiri's approach has been to discover and manipulate genes that produce retinal disease. His human clinical research work has been focused on identifying causative genes in patients

with inherited retinal diseases. To this end, he works closely with Dr. Suma Shankar, a medical genetics specialist with extensive experience with ophthalmic genetics, to determine a molecular diagnosis in patients from northern California and Nevada. With Dr. Shankar's help, numerous families have been diagnosed with the specific genetic mutation responsible

**With Dr. Shankar's help, numerous families have been diagnosed with the specific genetic mutation responsible for their condition.**

for their condition. To identify new disease genes, Dr. Moshiri also works closely with Dr. Christopher Murphy and Dr. Kent Lloyd of UC Davis, using mice with targeted genetic

deletions. These mice have proven to be a powerful tool toward arriving at a more complete list of retinal disease genes in humans, since the mouse and human genomes have substantial similarities. In collaboration with the Mouse Biology Program and its partners, Dr. Moshiri is in the process of reporting the discovery of 95 new retinal disease genes in mice. It is

expected that the majority of these genes will prove to be relevant in the human patient population.

Dr. Moshiri's research is also exploring strategies of stem cell

replacement of retinal tissue. He is excited to participate in Dr. Susanna Park's forthcoming NIH funded clinical trial using mesenchymal stem cells for the treatment of retinal vascular disease. Dr. Park's study is a 5-year clinical trial based on her preliminary work, which showed visual improvement in the majority of patients who underwent the stem cell treatment. "This is potentially a paradigm-shifting clinical trial, and I am excited to be part of this important project," he states.

In order to explore methods of replacing photoreceptor cells in macular diseases, Dr. Moshiri has recently submitted a collaborative NIH grant proposal with Dr. Sara Thomasy to work on a novel model of non-human primate cone photoreceptor disorder. This

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**"This is potentially a paradigm-shifting clinical trial, and I am excited to be part of this important project."**

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is also a very exciting project with the potential to employ gene therapy, gene editing, and stem cell replacement of cone photoreceptors in non-human primates. The hope is that this novel animal model will accelerate these restorative technologies to clinical application in people. Overall, the atmosphere of genetic research at the Eye Center is one of excitement at the potential for sight saving discoveries. ■

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## Suma Shankar

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MD, PhD, FRCS, MRCOphth, FACMG

Dr. Suma Shankar is an Associate Professor at UC Davis, Division of Genomic Medicine, Department of Pediatrics with an adjunct appointment in Ophthalmology. She is a trained ophthalmologist from the United Kingdom and India. She completed a PhD in molecular genetics and a fellowship in Pediatric Ophthalmology from the University of Iowa, and, Clinical Genetics residency from UC San Francisco. She joined Emory University, Atlanta, GA, as Assistant Professor with a joint appointment in Genetics and Ophthalmology. There, she initiated and led the "Ocular Precision Health Initiative" and developed the Next Generation Sequencing panel for inherited eye disorders, working with the Emory Genetics Lab as their Medical Director serving this previously unmet need in Georgia.

Dr. Shankar was recruited to UC Davis to develop and lead the "Precision Genomics Program." She holds the endowed Children's Miracle Network Chair in Pediatric Genetics that supports her research. The goal of the Precision Genomics Clinic is to provide definitive genetic diagnosis for individuals and families facing "diagnostic odysseys." She has developed and initiated "deep phenotyping" and "whole genome sequencing," available on a clinical basis to patients for the first time at UC Davis. She serves individuals with inherited disorders including

complex genetic patients using state-of-the-art phenotyping methods and genomic analysis.

She has a dedicated Ocular Genomics Clinic, the goal of which is to provide genetic services to individuals with inherited eye diseases. She is helping individuals and families obtain a precise diagnosis by identifying the underlying cause of their genetic conditions, understanding the inheritance pattern, and learning about options for potential future treatments. Obtaining a genetic diagnosis serves as a first step toward obtaining gene targeted therapies such as gene replacement therapy in patients with Leber Congenital Amaurosis caused by mutations in the RPE65 gene.

She is working further on establishing means to promote translational research by collaborating with the mouse phenotyping and genome group to better characterize the identified genes. Some examples of inherited conditions seen in this clinic include anophthalmia, microphthalmia, glaucoma, inherited retinal diseases such as retinitis pigmentosa, Leber congenital amaurosis, optic nerve atrophy, and macular dystrophies. The ultimate goal of the Ocular Genomics Program is to preserve vision and prevent blindness by providing genetic answers.

# DRY EYE: NEW HOPE

By Deanna Santana

Sierra Donor Services Eye Bank (SDSEB) and Sierra Donor Services have been serving the greater Sacramento Valley for over 30 years by connecting those who Donate Life to those who need organ, eye, and tissue transplants. Last year, Sierra Donor Services expanded to provide a service to ophthalmology patients by developing Vidaris™ Autologous Serum Eye Drops (ASED) after learning these patients had no way of obtaining this treatment for chronic dry eye.



Certain medical conditions can affect the eyes' ability to lubricate the corneal surface properly. The application of ASED may help alleviate discomfort from dry eyes. Derived from a patient's own blood serum, these drops nourish the eye like natural tears. Research findings suggest that ASED have a therapeutic advantage because they contain biological components naturally found in the eye.

Previously, patients had obtained autologous serum through compounding companies in Los Angeles, the central valley, and Kansas, but each location eventually stopped

providing them to patients due to low profitability and regulatory issues. SDSEB was uniquely situated to begin production and distribution safely with its state-of-the-art ISO clean rooms and non-profit organization. The encouragement of the medical director, Dr. Mark Mannis, M.D., and the support of many patients who were suffering from untreatable eye dryness led Sam Ramos, Executive Director of SDSEB, to research and develop Vidaris™ for our community and beyond.

One of those patients who cheered us on through the research, discovery, and safety testing phases was Bonnie Dale



FIG 1



(Fig 1), UC Davis Eye Center patient and Eye Center Advisory Council member. When asked what it means to her that the drops are available locally, she enthusiastically responded, "I worried about the quality when I had to keep changing pharmacies. I would be told that my shipment would arrive at 3pm on Tuesday. When it hadn't arrived at that time, I'd call them. They would say, 'maybe it'll get there tomorrow.' Now, I can come and get them myself. There was no accountability to me on the phone. Now I work directly with the eye bank staff, face to face."

SDSEB has strived to exceed all safety standards required. Beginning with securing contracts with certified labs to draw the patient's blood and deliver them to our facility and to sending the prepared drops to a lab to ensure the eye drops are free of contamination, our goal is to keep the patient safe and healthy.

Earl Lovell, a Sierra Donor Services Donate Life Ambassador and heart transplant recipient, heard of these drops attending an SDSEB open house. He had suffered with chronic dry eye and had exhausted other available therapies. Upon

talking to his ophthalmologist and obtaining a prescription for Vidaris™ autologous serum, he patiently waited for them to be prepared. After just a few days of using the drops, Earl said, "I have great news to share regarding my eyes. I just saw my ophthalmologist and I am happy to report that after 12 years of treating me for chronic dry eyes and after using Vidaris™ she could not find a single dry spot in either eye. These drops are magical."

Bonnie agrees, "After years of awful pain and discomfort, I was pain free after the 2nd dose! This treatment is a miracle for people like me." ■

# Seeing Possibilities

# The Power of Partnerships

UC Davis Eye Center and Society for the Blind

Shari Roeseler, Executive | Director, Society for the Blind

**It started with a phone call.** “Maddie’s” mom had been referred to Society for the Blind’s Low Vision Clinic by her daughter’s Ophthalmologist at the UC Davis Eye Center. Earlier in the year, 12-year-old Maddie had been diagnosed with Stargardt Disease, a genetic disorder that causes progressive vision loss. She was experiencing increased vision loss, and it was affecting her school work and emotional well-being.

Maddie was seen by one of Society’s Low Vision Optometrists and then referred to our Occupational Therapist. “The optometrist identified the areas of Maddie’s vision that were impacted with scotomas, or blind spots. Using this information, I taught Maddie how to move her eyes slightly to work around her blind spots and utilize her best vision” said Toni Boom, the clinic’s director and occupational therapist.

Toni provided Maddie and her parents with exercises to do at home so that Maddie could practice using her best functional vision. She also recommended adaptive products including a video magnifier to make reading and doing homework easier. The low vision optometrist also recommended adaptations for the classroom to promote Maddie’s success at school.



Maddie and her family have also been introduced to Society’s CareersPLUS Youth program, which provides after-school tutoring, weekend workshops, and family events for kids living with vision loss.

In March, Society for the Blind joined the UC Davis Eye Center in a study to assess the usefulness of the OrCam device for school-age children. Dr. Nandini Gandhi, MD, pediatric ophthalmologist at the Eye Center is heading up the study. ■

“The partnership with Society for the Blind allows us to offer patients extended services beyond the UC Davis Eye Center,” said Dr. Mark Mannis, Chair of the UC Davis Eye Center and board member at Society for the Blind. “Vision loss doesn’t have to mean you stop living. Society for the Blind gives people with vision loss the tools, skills, and support to live life to their fullest potential. It is a powerful partnership that benefits the entire Sacramento region.”

# The 4 1 1 on Upper Blepharoplasty

Lily Koo Lin, M.D.

Associate Professor, Ophthalmic Plastic and Reconstructive Surgery  
Fellow, American Society of Ophthalmic Plastic & Reconstructive Surgery (ASOPRS)

## Why is the eyelid skin drooping?

Younger skin is elastic and smooth, and thins with time. The eyelid skin is already one of the thinnest in the body, and is subject to continuous blinking and movement, causing the already thin skin to become more lax/loose over the years. Age, heredity, sun exposure, and smoking can advance this process as well.

## Can the eyelid skin block my vision?

Sometimes the excess skin hanging over the eyelid area can cause obstruction of peripheral vision. It may be more noticeable in a reading position with the chin down and when trying to access the peripheral (side) vision such as while driving (changing lanes).

## What is an “eyelid lift” or upper blepharoplasty?

Upper eyelid blepharoplasty is a surgery to remove excess skin on the upper eyelids. If the excess skin obstructs peripheral vision, upper blepharoplasty can help improve the peripheral visual field.

## Can health insurance cover upper blepharoplasty surgery?

When upper blepharoplasty is performed for functional reasons such as improving the peripheral vision, the surgery is considered reconstructive and may be covered by health insurance. Most health insurance plans, including Medicare, have strict guidelines or criteria that must be met in order for upper blepharoplasty to be considered functional.



## Will there be a scar?

Yes, a surgical incision is made during upper eyelid blepharoplasty surgery, and thus there is a scar. The incision is typically made along the natural eyelid crease so that most of the scar can be hidden in the “eyelid fold.” Depending on the patient’s anatomy, however, this cannot always be achieved. The scar is most noticeable with the eyelids closed, and in the first days to several weeks after surgery. The scar will continue to improve over the course of a year.

## What can I expect after surgery?

There are stitches/sutures along the incision sites on the eyelids. There is bruising and swelling around the eyes which can sometimes appear alarming. Cold compresses, avoiding strenuous activity, and sleeping with your head elevated, can help with bruising and swelling. Every patient heals differently, but for the average patient, 60-70% of the bruising and swelling is resolved two weeks after surgery. For most patients the majority of bruising and swelling is gone by four to six weeks after surgery. There is usually not much pain, and over the counter non-aspirin pain medications are typically sufficient.

## My neighbor had this surgery and said it was “easy.” Can I expect the same?

It is important to remember that upper blepharoplasty is a surgery. As with any surgery, there are potential risks and complications. The variables and outcomes of even the most seemingly straightforward procedures are different from patient to patient. The goal is to improve the condition, but no surgery can guarantee success or satisfaction. ■

For more information visit:  
[www.asoprs.org](http://www.asoprs.org)

Disclaimer:  
This content is for educational and informational purposes only. It is not a substitute for medical advice, diagnosis, or treatment provided by a qualified healthcare professional. You should always seek the advice of your physician for any questions about your own medical condition.



# Helen Keller's Continuing Legacy: The Knights of the Blind

By Derek Ledda



**O**n June 30, 1925, just 3 days before her 45th birthday, Helen Keller, a blind and deaf woman, who was famous for her tireless advocacy for numerous causes, addressed members of the International Association of Lions Clubs at their international convention in Cedar Point, Ohio. As she stood at the podium and spoke passionately to the Lions about her request, she could not have possibly imagined how her speech would change the lives of millions of blind people for the better over the next 85 years.

I offer you is full of splendid opportunities for service. Try to imagine how you would feel if you were suddenly stricken blind today. Picture yourself stumbling and groping at noonday as in the night; your work, your independence, gone. In that dark world wouldn't you be glad if a friend took you by the hand and said, 'Come with me and I will teach you how to do some of the things you used to do when you could see'? If you care, if we can make the people of this great country care, the blind will indeed triumph over blindness. Will you not help me hasten the day when there shall be no preventable blindness; no little deaf, blind child untaught; no blind man or woman unaided? I appeal to you Lions, you who have your sight, your hearing, you who are strong and brave and kind. Will you not constitute yourselves Knights of the Blind in this crusade against darkness?"

Although Lions around the world have enthusiastically embraced Helen Keller's request that they become her Knights of the Blind, it has always been critical to the Lions' success in carrying out and expanding their vision programs to have an increasing number of new Lions with a strong passion for and understanding of the best ways to meet the needs of the blind and visually impaired community and support organizations that focus on sight. Lions face daunting yet exciting challenges in meeting vision needs locally and in the 210 countries and geographical areas where Lions serve. They have been able to accomplish their goals because of the efforts of a core team of Lions who also work with similarly dedicated individuals and organizations devoted to preventing blindness, restoring sight, improving eye health care, and empowering blind and visually impaired people

*"If you care, if we can make the people of this great country care, the blind will indeed triumph over blindness. Will you not help me hasten the day when there shall be no preventable blindness; no little deaf, blind child untaught; no blind man or woman unaided?"*



“Alone we can do so little. Together we can do so much.” – Helen Keller

Braille representation of the quote: "Alone we can do so little. Together we can do so much."

to become more independent and realize their full potential.

If you care about changing the lives of blind people and diabetics for the better, District 4-C5 of Lions Clubs International (LCI) extends an invitation to you and to others you know who care about sight to join the new Lions Sight Specialty Club that is being formed, and become one of Helen Keller's Knights of the Blind. If you work or volunteer for a sight or diabetes-based organization or treatment facility, are an optometrist, ophthalmologist, optician, or work for one, and especially, if you are blind, visually impaired, diabetic, or are related to or close friends with one, we need you on our team. Even if you are busy and can only do a little, together with the other club members, you can accomplish a lot and even make the seemingly impossible happen.

With the Lion resources that are available, the club will help to:

- 1. **Maintain existing sight projects and programs and develop and promote new ones needed in the community.**
- 2. **Support groups and organizations that serve the blind, visually impaired, diabetics, and their families.**
- 3. **Educate the community about sight related issues, needs, and services.**
- 4. **Provide a setting in which the members can share information and provide mutual support as a Lion family united by a common passion and purpose.**

The District 4-C5 Lions, whose 54 clubs and 1550 members provide humanitarian service in

the greater Sacramento region, have worked hard to support Lion and other sight projects in the area, including the Northern California Lions Sight Association, which does adult and child sight screening, sponsors eye surgeries for people who cannot otherwise afford to have them, and financially supports organizations with similar missions, like the UC Davis Eye Center, the Society for the Blind, and the Placer County Center for Visually Impaired Adults (CVIA).

Lions also sponsor the Folsom Project for the Visually Impaired at Folsom Prison where prisoners take the thousands of glasses that Lions collect and clean, repair, and grade them to be re-used, especially in developing countries. They also prepare braille materials. In addition to the University of California at Davis Eye Center, the Society

for the Blind and the CVIA, Lions have supported the Sierra Donor Services Eye Bank, Guide Dogs for the Blind, the United States Association of Blind Athletes' National Blind Runners Championship, the Retinitis Pigmentosa Support Group, and the Juvenile Diabetes Research



Foundation, just to name a few. The Lions' achievements around the world include restoring sight to 9.1 million people through cataract surgeries, building or expanding 1,520 eye hospitals and related facilities, training more than 1.57 million ophthalmologists and other eye care specialists and personnel, launching the world's first-ever initiative to combat childhood blindness in partnership with the World Health Organization, and establishing or strengthening 54 pediatric eye care centers around the world which served 153 million children. The Lions Clubs International Foundation's support has been critical in helping the governments of Colombia, Ecuador, Guatemala, and Mexico eliminate River Blindness as well as significantly reducing the impact of the disease in Cameroon, Ethiopia, Mali, and Uganda.

Helen Keller said something else that inspires our efforts to form a sight-based Lions Club. She said "The only thing worse than being blind is having sight but no vision." It was her vision that long after she was gone, her Knights of the Blind would carry on her work. It will be up to the new sight-based Lions Club to translate Helen Keller's vision into the Lion projects, programs, and collaborations in the future that will help to realize her dream of a day "when there shall be no preventable blindness; no little deaf, blind child untaught; no blind man or woman unaided." We appeal to you in her words, "you who are strong and brave and kind. Will you not constitute yourselves Knights of the Blind in this crusade against darkness?" ■

Please contact either of the following members of the U.C. Davis Eye Center Executive Advisory Council for more information about becoming a member of the new sight based Lions Club. You do not have to live in the Sacramento area to join.

**Lion Derek Ledda**  
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(916) 205-4185

**Lion Dr. Ernie Takahashi**  
District 4-C5 Sight Chairperson  
ektakahashi@sbcglobal.net  
(916) 201-4972

together

# The Center for Vision Science Annual Symposium

by Paul FitzGerald, Ph.D

The UC Davis Center for Vision Sciences held its annual symposium January 19, at the UC Davis Genome and Biomedical Sciences auditorium on the Davis campus. In opening remarks, Dr. Paul FitzGerald noted how in the last 16 years, UC Davis Medical School has risen from 62nd in the nation in research funding to 26th. This is, by far, the fastest rise in such rankings for any medical school in the United States. The vision sciences group at UC Davis has exceeded this and is now ranked about 15th in the nation for extramural research funding, an exceptional accomplishment and testimony to the highly productive collaborations between Vision Scientists at the School of Medicine, School of Veterinary Medicine, College of Biological Sciences, College of Letters and Science, and School of Engineering. It is also testimony to the School of Medicine leadership and their willingness to invest in the research enterprise.

This symposium included presentations by our trainees, including both graduate students and postdoctoral fellows, as well as new faculty, senior faculty, and two outstanding keynote speakers. The first of our keynote speakers and recipient of the 2018 UC Davis Lectureship in Vision Science was Monica Vetter, PhD, Chair of the Department of Neurobiology and Anatomy and Adjunct Professor of Ophthalmology/Visual Sciences, University of Utah School of Medicine. Dr. Vetter's talk was entitled "**Microglia and innate immune pathways: shaping the retina in development and degeneration.**" The 2018 John Keltner Lecture in Ophthalmology was delivered by James Rosenbaum, M.D., Clinical Professor of Ophthalmology, Oregon Health Sciences University and the Edward E. Rosenbaum Chair for the Study of Inflammatory Disease. Dr. Rosenbaum's talk was entitled "**Does the microbiome cause uveitis?**"

Next year's symposium will be held January 11, 2019. If you would like to be on the CVS mailing list, please send your name and email address to [pgfitzgerald@ucdavis.edu](mailto:pgfitzgerald@ucdavis.edu).

# Comparative Ophthalmology Grand Rounds

by Christopher Murphy, D.V.M., Ph.D.

Every year a special comparative ophthalmology grand rounds is held in conjunction with the School of Veterinary Medicine. These were started in the mid 1980s and have been held annually since then. The selection of the topic and organization of this special rounds was the responsibility of the 3rd year resident (Dr. Ann Cooper) and 1st year resident (Dr. Kelly Knickelbein) in the comparative ophthalmology program at the School of Veterinary Medicine. The topic of rounds selected by Dr. Cooper and Dr. Knickelbein this year was comparative aspects of the retina.

Physician and veterinary ophthalmologists were provided the opportunity to examine the fundus of a variety of veterinary species, review posters prepared by all the residents and the comparative ophthalmology intern that presented an array of retinal adaptations, review comparative retinal anatomy (led by the second year resident Dr. Bret Moore) and listen to talks on retinal anatomy, physiology, and patterns of nutritional supply.

Dr. Thomas Kern, a well-known educator and accomplished clinician at the School of Veterinary Medicine at Cornell University, was a visiting Professor and participated in the various educational stations and spoke on retinal vascular patterns.



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**AMERICAN GLAUCOMA SOCIETY (AGS) HUMANITARIAN AWARD**

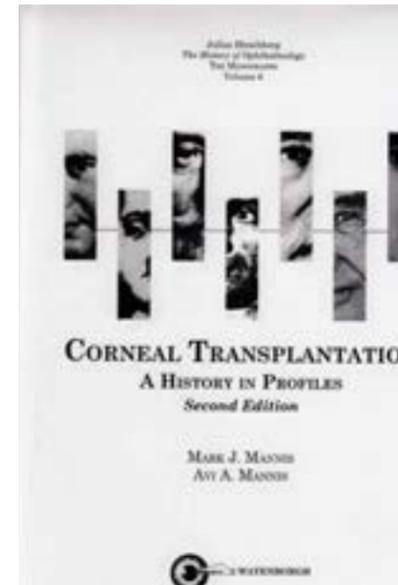
**James D. Brandt, M.D.**  
 Professor & Vice-Chair  
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 Director, Glaucoma Service  
 UC Davis Eye Center

**AWARDS**

Dr. Brandt was honored by the AGS for his dedicated efforts to teach physicians and provide care the world over.

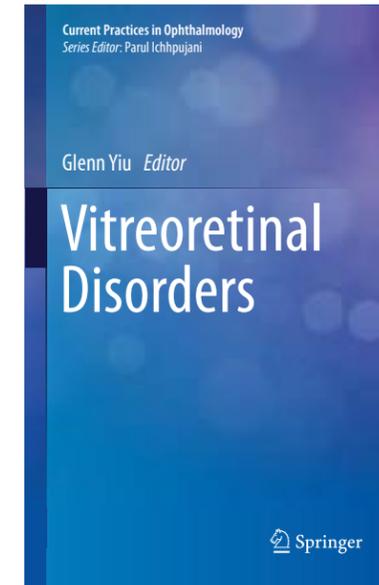
**CORNEAL TRANSPLANTATION  
 A HISTORY IN PROFILES**

Mark J. Mannis, M.D.  
 Avi Mannis



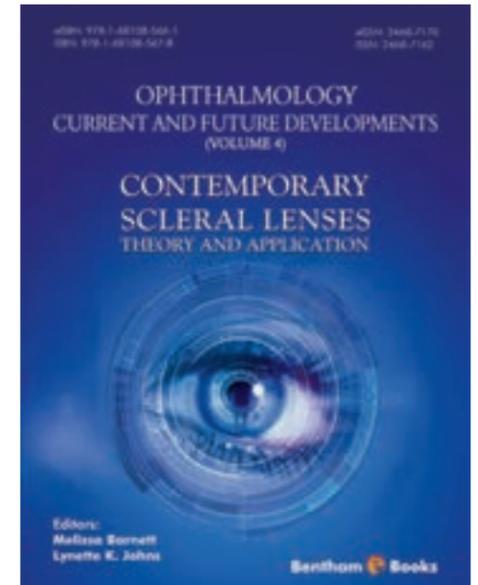
**VITREORETINAL DISORDERS**

Glenn Yiu, MD, Ph.D



**CONTEMPORARY SCLERAL LENSES: THEORY AND APPLICATION**

Melissa Barnett, OD, FAAO, FSLs



**& NEW BOOKS**



**YOUNG OPTOMETRIST OF THE YEAR**

**Dr. Jonathon Ross, O.D., M.S., F.A.A.O.**  
 Dr. Ross was selected as one of the 2018 California Optometric Association's Young Optometrists of the Year.

# MAXIMIZE THE TAX BENEFITS OF CHARITABLE GIVING

by David Motes, C.P.A.



## Efficient Ways to Give Under the Tax Cuts & Jobs Act of 2017

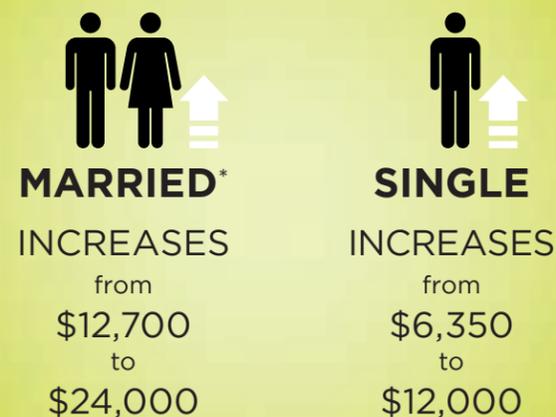
On December 22, 2017, the President signed into law H.R. 1, also known as the Tax Cuts & Jobs Act of 2017. This act was the first comprehensive change to our tax laws since the enactment of the Tax Reform Act of 1986. Generally, this tax act is effective beginning January 1, 2018 and sunset on December 31, 2025. This means that the existing tax law that was in effect prior to the enactment of the Tax Cut & Jobs Act becomes law once again on January 1, 2026 unless Congress passes legislation to change the tax law. The provisions of the Act include, but are not limited to, changes in the tax rates, items of income, itemized and standard deductions, and personal exemptions.

Since charitable giving falls into the category of itemized deductions, it is important to understand the components of allowable itemized deductions. Under the Act, itemized deductions will generally consist of:

- ✓ Medical expenses (very limited due to the 7.5% adjusted gross income adjustment);
- ✓ State and local taxes and property taxes (known as SALT) with an overall cap of \$10,000;
- ✓ Home mortgage interest with a cap on new home loans of \$750,000 and investment interest;
- ✓ Charitable contributions

Please note that the interest deduction for home equity indebtedness and the miscellaneous itemized deductions subject to the 2% limit are suspended for the years 2018 through 2025. In addition, the Act increased the standard deduction across all filing statuses. The standard deduction for the filing status of married filing a joint return increases from \$12,700 to \$24,000 while the filing status of single increases from \$6,350 to \$12,000. Due to the changes to the allowable itemized deductions and due to the increase in the standard deduction, the number of taxpayers claiming the standard deduction will increase significantly. The White House Council of Economic Advisers has estimated that 92% of taxpayers will claim the standard deduction.

### STANDARD DEDUCTION FOR THE FILING STATUS OF



\*filing a joint return

With the doubling of the standard deduction, it is possible that the tax benefits of charitable giving will not apply to many donors. Therefore, the following tax planning strategies should be considered to maximize the tax benefits of charitable giving:

## 1 STRATEGY

Bunch your charitable contributions by paying two years of contributions in the same tax year and then none in the following year. This way, your itemized deductions may be higher than the standard deduction in the year of the increased contributions and you would claim the standard deduction in the following year when your itemized deductions are lower. Essentially, you would be reporting your itemized deductions in the first year, followed by claiming the standard deduction in the next year. By shifting the year of contributions, you may realize an additional tax benefit that may normally be lost.

If you implement this strategy and have any concerns with the disruption to the cash flow of your designated charity, consider establishing a donor advised fund. This way you will make contributions to your donor advised fund every other year and the donor advised fund will continue to make annual distributions to your designated charities of choice.

If you have any questions about the strategies discussed above, please contact David Motes at (916) 563-7138 or David@MotesCPA.com. For additional gift planning strategies, please contact the Office of Planned Giving at (530) 754-2286 or [plannedgiving@ucdavis.edu](mailto:plannedgiving@ucdavis.edu). Please remember to contact your CPA or other tax advisor before implementing any of the strategies discussed to determine the appropriate approach based on your individual circumstances.

## 2 STRATEGY

If you are over 70 1/2 years young, consider making a qualified charitable distribution (QCD) from your individual retirement account (IRA). This distribution will count toward your annual required minimum distribution (RMD) and is not deductible as a charitable contribution. The QCD is limited to \$100,000 per year, per taxpayer. By employing this strategy, you are reducing the amount of your taxable IRA distribution which is an above-the-line deduction and you can still claim the standard deduction if your total itemized deductions are below the standard deduction. This means that you are reducing your itemized deductions and increasing the tax benefits of the standard deduction without losing any deduction for your charitable contribution. Please note that you are still required to obtain the supporting documentation from the charity for any contributions that exceed \$250 if you implement this strategy.

It is unlikely that the State of California will conform to the provisions of the Tax Cuts and Jobs Act; therefore, the tax laws for itemized deductions will be different for federal and California purposes.

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## Gratitude ~ Progress ~ Hope

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

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It is with deep gratitude that the UC Davis Eye Center recognizes the following individuals for making us a part of their estate plans.

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***We will correct our records immediately.***

## 2017 Publications

**Melissa Barnett, O.D., F.A.A.O., F.S.L.S., F.B.C.L.A**  
Department of Ophthalmology and Vision Science  
School of Medicine

**Barnett M.** Contact Lens Spectrum Special Edition 2017: Your Guide to Specialty Contact Lenses. Scleral Lenses for Everyone. Contact Lens Spectrum. November 2017.

**Barnett M,** Fadel D. Scleral Lenses: The Benefits of Toric Landing Zones. Incorporating toric landing zones for asymmetric scleras can resolve many scleral lens fitting complications. Contact Lens Spectrum. November 2017.

Caffery B, Harthan J, Acs, M, **Barnett M,** Johnson-Tong L, Kelly S, Papinski D, Pemberton B, Srinivasan S. Comparison of the Severity of Dry Eye in Sjogren's Syndrome versus Aqueous Deficient Dry Eye. Poster American Academy of Optometry. October 2017.

Mickles C, Meyer D, Cox S, **Barnett M,** Kolbaum P. Vision-Related Quality of Life in Keratoconus: Scleral versus Corneal Gas Permeable Lens Correction. Poster American Academy of Optometry. October 2017.

**Barnett M,** Johns L. Ophthalmology Current and Future Developments (Volume 4). Contemporary Scleral Lenses: Theory and Application. ISSN

(Online): 2468-7170, ISSN (Print): 2468-7162, ISBN (Online): 978-1-68108-566-1, ISBN (Print): 978-1-68108-567-8, © 2017, Bentham eBooks imprint.

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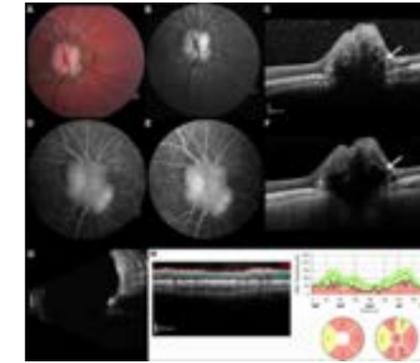
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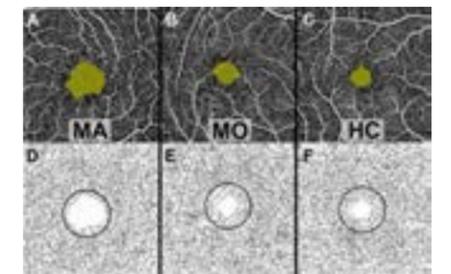
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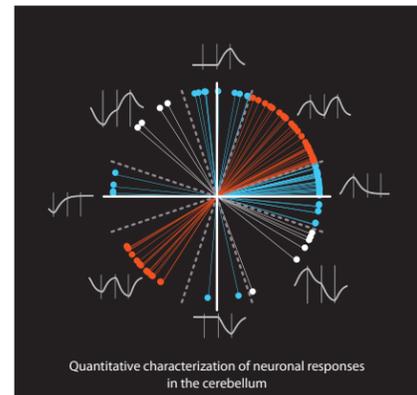
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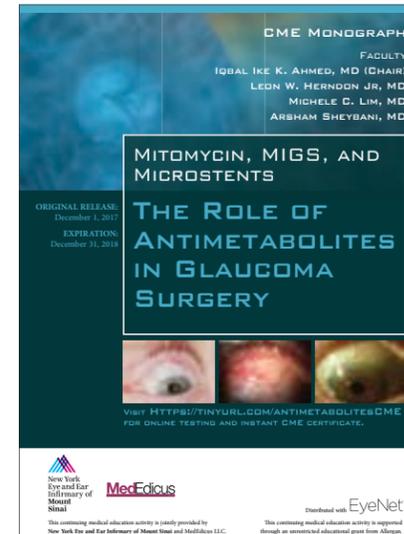
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**Mary O'Hara, M.D., F.A.C.S., F.A.A.P.**  
**Department of Ophthalmology**  
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**Park SS**, Moisseiev E, Bauer G, Grant MA, Zam A, Zawadzki RJ, Werner JS, Nolta J. Advances in bone marrow stem cell therapy to treat retinal dysfunction. *Prog Ret Eye Res*. 2017 Jan; 56: 148-165. (by invitation, \*corresponding author; PMID 27784628; PMC5237620).

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Moisseiev E, Anderson J, Oltjen S, Goswami M, Zawadzki RJ, Nolta JA, **Park SS**. Protective Effect of Intravitreal Administration of Exosomes derived from Mesenchymal Stem Cells on Retinal Ischemia. *Curr Eye Res*. 2017 Oct; 42 (10): 1358-1367 (\*corresponding author; PMID 28636406).

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**Ivan R. Schwab, M.D., F.A.C.S.**  
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**School of Medicine**  
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## 2017 Publications

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**Vivek Srinivasan, Ph.D.**  
**Department of Ophthalmology & Vision Science**  
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**Sara M. Thomasy, D.V.M., Ph.D., D.A.C.V.O.**  
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Moisseiev E, Anderson JD, Oltjen S, Goswami M, **Zawadzki RJ**, Nolta JA, Park SS.

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Li L, Zhang K, Lu C, Sun Q, Zhao S, Jiao L, Han R, Lin C, Jiang J, **Zhao M**, He Y. Caveolin-1-mediated STAT3 activation determines electrotaxis of human lung cancer cells. *Oncotarget*. 2017;8(56):95741-95754. doi: 10.18632/oncotarget.21306. eCollection 2017 Nov 10.

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## 2017 Publications

**Rebecca R. Bellone, Ph.D.**  
**Department of Population Health and Reproduction**  
**School of Veterinary Medicine**  
**Center for Vision Science**

Mack M., Kowalski E., Grahn R., Bras D., Penedo M.C.T., **Bellone R**. Two variants in SLC24A5 are associated with "Tiger-Eye" iris pigmentation in Puerto Rican Paso Fino horses. *G3: Genes|Genomes|Genetics*. 2017 Aug 7;7(8):2799-2806. DOI:10.1534/g3.117.043786.

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**David J. Maggs, Ph.D.**  
**Department of Surgical & Radiological Sciences**  
**School of Veterinary Medicine**  
**Center for Vision Science**

Auten CR, Thomasy SM, Kass PH, Good KL, Hollingsworth SR, **Maggs DJ**. Cofactors associated with Sudden Acquired Retinal Degeneration Syndrome: 151 dogs within a reference population. *Vet Ophthalmol*. 2017 Aug 27. doi: 10.1111/vop.12504. [Epub ahead of print]. PMID: 28845542.

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regional anesthetic techniques in dog cadavers *Veterinary Anaesthesia and Analgesia*. 2017 Jul;44(4):925-932. doi: 10.1016/j.vaa.2017.02.009. Epub 2017 Apr 13. PMID: 28716684.

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**Naoki Saito, Ph.D.**  
**Department of Mathematics**  
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Irion J, **Saito N**. Efficient approximation and denoising of graph signals using the multiscale basis dictionaries. *IEEE Transactions on Signal and Information Processing over Networks*. 2017; 3(3): 607-616

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**W. Martin Usrey, Ph.D.**  
**Department of Neurobiology, Physiology & Behavior**  
**College of Biological Sciences**  
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**School of Medicine**  
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## LEADERSHIP



**Mark J. Mannis, M.D., F.A.C.S.**  
Fosse Endowed Chair in Vision Science Research  
Distinguished Professor and Chairman, Cornea and External Disease  
Research Interests: Corneal transplant technology, eye and skin diseases, and artificial corneas



**James D. Brandt, M.D.**  
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Director, Glaucoma Service  
Professor, Glaucoma  
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**Christopher J. Murphy, D.V.M., Ph.D.**  
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Professor, Comparative Ophthalmology  
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## FACULTY



**Annie K. Baik, M.D.**  
Associate Professor, Glaucoma  
Veterans Administration, Mather  
Research Interests: Emerging glaucoma surgical techniques, patient education



**John L. Keltner, M.D.**  
Research Director  
Chair Emeritus  
Distinguished Professor/Emeritus, Neuro-Ophthalmology  
Research Interests: The effects of multiple sclerosis and cancer on vision



**Jeffrey J. Caspar, M.D.**  
Director, Cataract and Refractive Surgery  
Professor, Comprehensive Ophthalmology and Refractive Surgery  
Research Interests: Cataract surgery after refractive surgery and new techniques for cataract extraction



**Nandini Gandhi, M.D.**  
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Associate Professor, Pediatric Ophthalmology and Strabismus  
Research Interests: International ophthalmology and curriculum development



**Esther S. Kim, M.D.**  
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## FACULTY



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Director and Professor, Pediatric Ophthalmology and Strabismus Service  
Research Interests: Development of new technology in pediatric strabismus



**Roma Patel, M.D., MBA**  
Chief of Ophthalmology and Eye Care Division, Sacramento Veterans Affairs Hospital  
Assistant Professor of Ophthalmology, UC Davis Eye Center  
Research Interests: New models of eye care delivery, Glaucoma surgical advances



**Glenn C. Yiu, M.D., Ph.D.**  
Associate Professor, Vitreo-retinal Surgery  
Research Interests: Neuro-regeneration, retinal cell biology, ocular imaging



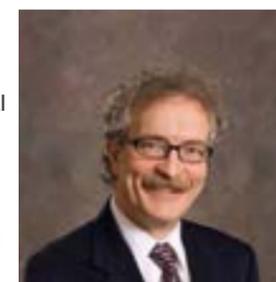
**Lily Koo Lin, M.D.**  
Associate Professor, Oculoplastic Surgery  
Research Interests: Improvement of aging eyelids and the relationship between the orbit, globe and trauma



**Ala Moshiri, M.D., Ph.D.**  
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Research Interests: Genetic diseases



**Susanna S. Park, M.D., Ph.D.**  
Professor, Vitreo-retinal Surgery  
Research Interests: Age-related macular degeneration, proton beam therapy, and stem cell therapies



**Ivan R. Schwab, M.D., F.A.C.S.**  
Professor Emeritus, Cornea and Uveitis  
Research Interests: Limbal stem cell transplants and comparative anatomy

## VETERAN AFFAIRS NORTHERN CALIFORNIA



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New treatment for  
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Sacramento Veterans Affairs Hospital  
Assistant Professor of Ophthalmology,  
UC Davis Eye Center  
Research Interests: New models of  
eye care delivery, Glaucoma surgical  
advances



**Vivian Lien, M.D.**  
Clinical Assistant Professor of  
Ophthalmology  
Sacramento Veterans Affairs Hospital  
Assistant Professor of Ophthalmology  
UC Davis Eye Center  
Research Interests: Anterior segment  
reconstruction and complex cataract  
surgery techniques



**Ernest Tark, M.D.**  
Ophthalmologist  
Veterans Affairs, Martinez  
Health Sciences  
Clinical Professor  
UC Davis Eye Center

### NOT PICTURED

**Tiffany Wong, M.D.**  
Ophthalmologist  
Veterans Affairs, Mather  
Health Sciences  
Assistant Clinical Professor  
UC Davis Eye Center

### Patient comments:

I feel I am very fortunate to have my medical care provided by Dr. James Brandt. The staff is always pleasant and courteous.

Dr. Annie Baik is one of my favorite physicians; I think that she is very professional, very knowledgeable, and she is very aware of the latest technology as it relates to my personal needs. I also referred my husband to her.

Dr. Lily Lin was amazing. Her surgical skill was outstanding. In addition, she was personable, compassionate, and well informed. Technically and personally she is among the very best doctors I have worked with in my life, as are her staff who clearly adore her.

Dr. Esther Kim is wonderful; I will recommend her to all my friends that need her services. Her staff is great too — thank you for taking such good care of me.

Dr. Susanna Park provides ongoing care for an eye condition. She is great at her specialty and I have highly recommended her to others.

## 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

**David Chu, M.D.**  
Assistant Clinical Professor

**Ronald Cole, M.D.**  
Clinical Professor

**Charles Cooper, M.D.**  
Clinical Professor

**Tyrone Glover, M.D.**  
Clinical Professor

**J. Charles Hartley, M.D.**  
Clinical Associate

**Sukhjit Johl, M.D.**  
Assistant Clinical Professor

**Jared Kelstrom, M.D.**  
Clinical Associate

**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

**Robert Miller, M.D.**  
Clinical Professor

**Gary Novack, Ph.D.**  
Clinical Professor

**Roma Patel, M.D.**  
Health Sciences 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

**David Simon, M.D.**  
Clinical Associate

**Francis Sousa, M.D.**  
Clinical Professor

**Ernest Tark, M.D.**  
Clinical Professor

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

**Tiffany Wong, M.D.**  
Assistant Clinical Professor

**John Zeiter, M.D.**  
Clinical Professor

## OPTOMETRISTS



**Melissa Barnett Erickson, O.D., F.A.A.O., F.S.L.S.**  
Principal Optometrist



**Paul Nefedov, O.D., M.S.**  
Optometrist



**Brooke S. Chang, O.D.**  
Senior Optometrist



**Kaaryn Pederson-Vanbuskirk, O.D., F.A.A.O.**  
Senior Optometrist



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



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



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



**Hai Tong, O.D.**  
Senior Optometrist

## ORTHOPTIST



**Tania Usner, B. Med. Sci.**  
Orthoptist

## VISION SCIENTISTS



**Nick Marsh Armstrong, Ph.D.**  
Associate Professor  
Research Interests:  
Basic cellular, molecular and developmental biology of retinal ganglion cells relevant to glaucoma



**Andrew T. Ishida, Ph.D.**  
Professor, Neurobiology, Physiology & Behavior  
Research Interests:  
Modulation of retinal ganglion cell excitability



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



**Ravi S. Jonnal, Ph.D.**  
Assistant Professor  
Research Interests:  
Functional imaging of retinal neurons with adaptive optics



**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



**Christopher J. Murphy, D.V.M., Ph.D.**  
Vice Chair for Innovation and Industry Relations  
Professor, Comparative Ophthalmology  
Research Interests:  
Bio-physical cueing and modulation of cell behaviors



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



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



**Leonard Hjelmeland, Ph.D.**  
Professor Emeritus, Molecular & Cellular Biology Ophthalmology  
Research Interests:  
Senescence of retinal pigment epithelium

## VISION SCIENTISTS



**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



**Vivek J. Srinivasan, Ph.D.**  
Assistant Professor,  
Biomedical Engineering  
Research Interests: Retinal  
and optic nerve imaging,  
blood flow and metabolism



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



**Sara Thomasy, DVM, Ph.D.**  
Associate Professor of  
Comparative Ophthalmology  
Research Interests: Corneal  
wound healing, glaucoma, ocular  
pharmacology, antiviral therapy  
for FHV-1, large animal models of  
ophthalmic disease



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



**Robert J. Zawadzki, Ph.D.**  
Associate Professor  
Research Interests:  
High resolution retinal and optic  
nerve imaging techniques



**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



**Angela Jiang, M.D.**  
Clinical Glaucoma Fellow 2019



**Lekha Mukkamala, M.D.**  
Clinical Retina Fellow 2019



**Afua Shin, M.D.**  
Clinical Cornea Fellow 2019



**R. Joel Welch, M.D.**  
Clinical Retina Fellow 2020



**Amirfarbod Yazdanyar, M.D., Ph.D.**  
Clinical Retina Fellow 2019

### *Patient comments:*

Dr. Ala Moshiri and his team always provide excellent care, are empathetic, and kind. I couldn't be in better hands.

Dr. Glenn Yiu and his staff went out of their way to help me and seemed to genuinely care about my level of care — not because it was their job, but because of the kind of people they are.

Dr. Heidi Miller and staff were all very kind, helpful, and attentive. I was 100% satisfied with my visit and will recommend to friends and family.

Dr. Jennifer Li and Dr. Ralph Kyrillos provided excellent care addressing my medical issue. Dr Li is very communicative, efficient, and considerate in her patient rapport. She listens well.

The fellow, Dr. Han Kim, was outstanding in the way he explained the results of my optic nerve scan.

## RESIDENTS



Justin Hellman, M.D.  
Third Year Resident 2019



Sangeeta Kalsi, M.D., M.P.H.  
Third Year Resident 2019



Aaron Skelton, M.D.  
Third Year Resident 2019



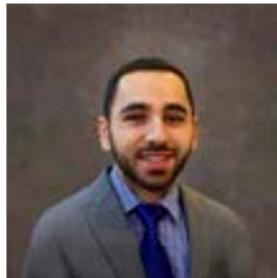
Michael Yen, M.D.  
Third Year Resident 2019



Jefferson Berryman, M.D.  
Second Year Resident 2020



Michael Ellis, M.D.  
Second Year Resident 2020



Abdala Sirajeldin, M.D.  
Second Year Resident 2020



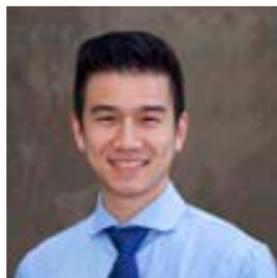
Alex Willoughby, M.D.  
Second Year Resident 2020



Colin Bacorn, M.D.  
First Year Resident 2021



Ruth Tessema, M.D.  
First Year Resident 2021



Alexander Vu, M.D.  
First Year Resident 2021



Vivian Vuong, M.D.  
First Year Resident 2021



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## Michael Mizoguchi, M.D.

Resident Class of 2002  
Humboldt Medical Eye Associates  
Redwood Memorial Hospital  
Eureka, CA



## Chris Serdahl, M.D.

Resident Class of 1991  
Eye Site Sacramento  
Sacramento, CA



## Sean Adrean, M.D.

Resident Class of 2004  
Retina Consultants of Orange County  
Anaheim, CA



The alumni of UC Davis Eye Center continue to make an impact in their practices and areas of research. We would like to highlight several success stories and congratulate our alumni for their ongoing achievements.

**Michael Mizoguchi, M.D.**, was recently named the Chair of the Department of Surgery at Redwood Memorial Hospital.

His wife Amy, daughter, Sophia (14), and son, Alexander (11), enjoy living in that area of Northern California.

“I really enjoy seeing a few faces from the past in the Alumni Highlights section of the *enVISION* magazine. Between being in a busy solo private practice, being the Chair of the Department of Surgery, and raising a family, I don’t get much time off to travel to see friends and keep up relationships, so I really relish being able to keep up with what’s going on with my old friends at UC Davis through the *enVISION* magazine! It’s a great way to keep tabs on the Department and see some old faces and the new as well.

The Northern California area always has a need for more ophthalmologists, so if any residents are interested in a private practice on the North Coast of California, please call me anytime!”

**Christian L. Serdahl, M.D.**, is the incoming president of the Sierra Sacramento Valley Medical Society’s Board of Directors. The board is a panel of 15 physicians who are committed to advocating for physician’s rights while building a stronger, more unified healthcare community in El Dorado, Sacramento and Yolo counties. They actively work with physician members, patient groups, local and state elected officials, and our partners in the California Medical Association to advance our common goals. Please reach out to Dr. Serdahl at [Chris@EyeSiteMD.com](mailto:Chris@EyeSiteMD.com) to learn how you can get involved with the society. Dr. Serdahl’s appointment begins in January 2019.

Sean Adrean’s most recent publication was featured in the AAO email news section.

[Consistent Long-Term Therapy of Neovascular Age-Related Macular Degeneration Managed by 50 or More Anti-VEGF Injections Using a Treat-Extend-Stop Protocol.](#)

Adrean SD, Chaili S, Ramkumar H, Pirouz A, Grant S.

Ophthalmology. 2018 Feb 10. pii: S0161-6420(17)33259-1. doi: 10.1016/j.ophtha.2018.01.012.

Please read the full abstract here: <https://goo.gl/WFGyQN>

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(LASIK) Appointments  
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Please contact Kimber Chavez for additional information on events at (916) 734-7781 or [KLChavez@ucdavis.edu](mailto:KLChavez@ucdavis.edu).

## COMING IN NEXT en**VISION** ISSUE:

Location of the Ernest E. Tschannen Eye Institute Announced

Please look for the next issue of **enVision** in the Spring with updates on the

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**ERNEST E. TSCHANNEN  
EYE INSTITUTE**



**Illustration:** Artist rendering, not actual