



Fall / Winter 2013

# enVISION

News from the UC Davis Eye Center



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**November 17, 2013**

**Alumni and Volunteer Clinical Faculty Reception**  
American Academy of Ophthalmology  
Royal Sonesta  
New Orleans, Louisiana

**June 6-8, 2014**

**37<sup>th</sup> Annual Ophthalmology Symposium**  
Treating Eyes Across Medical Specialties  
Are you a "TEAM S" Player?  
Napa Valley Marriott Hotel & Spa  
Napa, California

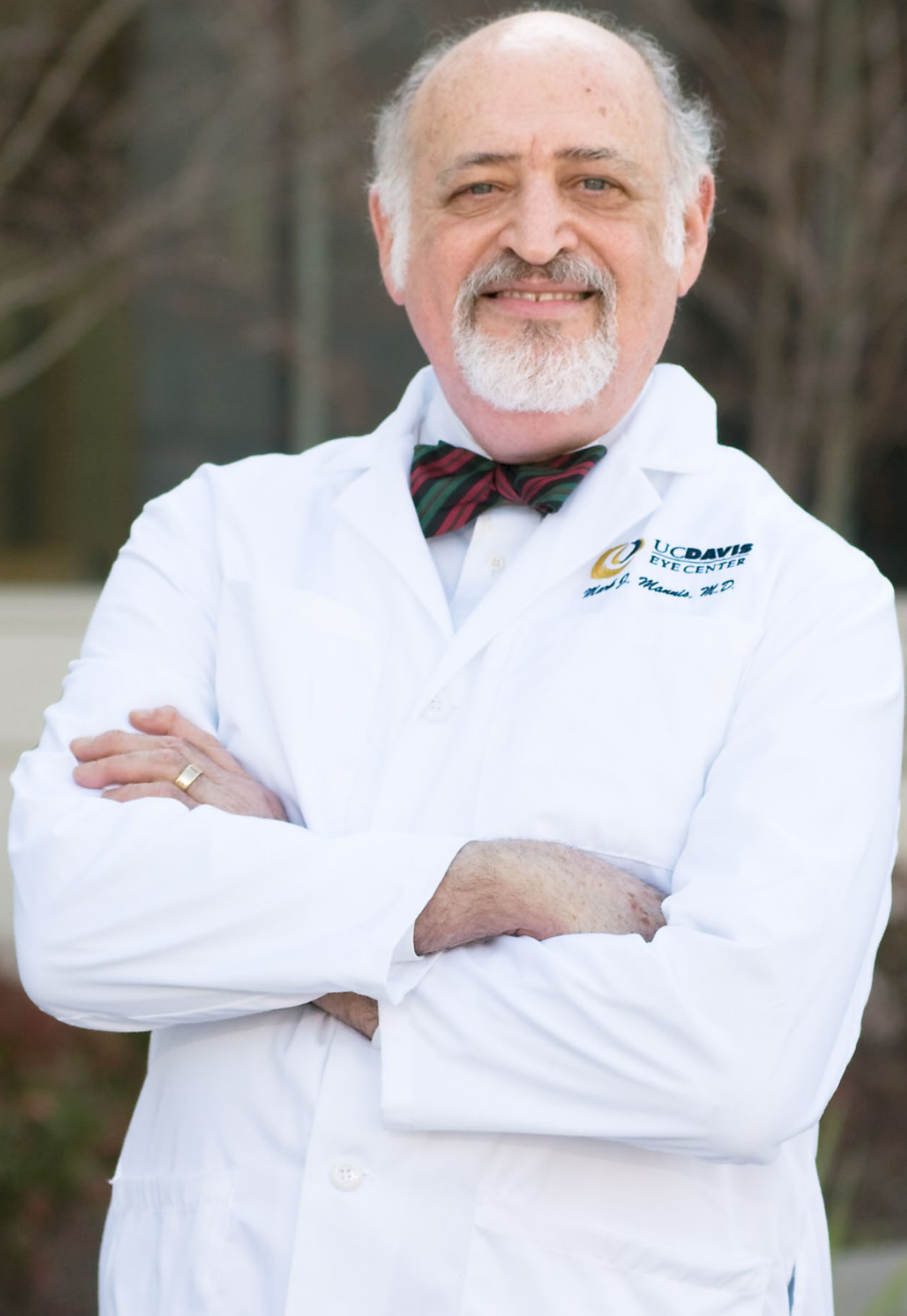
**June 21, 2014**

**3<sup>rd</sup> Annual Resident & Alumni Day**  
Matsui Lecture Hall  
Education Building, UC Davis Medical Center  
Sacramento, California

**September 20, 2014**

**3<sup>rd</sup> Annual The EYES of a Child**  
Basic Concepts in Pediatric Eye Care  
Crowne Plaza Hotel  
Sacramento, California





# FROM THE CHAIR'S DESK

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One of the great strengths of the vision program at UC Davis is the proximity to, and the alliances with, individuals in other disciplines across the campus, both in Davis and Sacramento. Excellence in providing clinical services at the Eye Center is but the tip of the iceberg in what makes up the activity in the department. Collaborations with the School of Veterinary Medicine, with members of the College of Biological Sciences, and with Biomedical Engineering are only a few of the many partnerships that fuel both creative research as well as advances in clinical medicine.

This issue of enVision deals with collaboration—with our School of Veterinary Medicine, recognized as the finest in the United States, as well as with other departments and with colleagues internationally. You will read an article about the Chief Executive Officer of our Hospital,

appropriate here since any eye center that offers broad-spectrum care operates in the context of a comprehensive health system. Indeed, vision care is well integrated into the total care received at UC Davis. We take pride in our partnerships both with other departments of the Health System as well as with our colleagues in research on the Davis campus. These partnerships enhance the care received by our patients and keep us at the cutting edge of contemporary medicine.

Sincerely,



Mark J. Mannis, MD  
Professor and Chair  
UC Davis Eye Center



is published by the UC Davis Eye Center. For more information about ophthalmology services and vision research at UC Davis, visit our Web site at: [www.ucdmc.ucdavis.edu/eyecenter](http://www.ucdmc.ucdavis.edu/eyecenter) or call (916) 734-6435.

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## OUR VISION ▼

Our vision is to be the world's transformational leader in collaborative vision research and in 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.

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Mark Mannis, MD, Chair of the UC Davis Eye Center, has just published a new book on the diagnosis and treatment of diseases of the ocular surface. Written in collaboration with his colleague, Edward Holland, MD, and former UC Davis fellow and corneal specialist, Barry Lee, MD, along with a group of prominent contributors, the new text promises to be the most comprehensive and authoritative book on the subject. Dr. Mannis is seen here with Steve Osborne, the designer of *enVision* magazine and the creator of the new text book's cover. The book was published in May 2013 by Elsevier Publishers, Inc. London.

# VISUAL ILLUSIONS – THE SERIOUS SIDE OF FUN

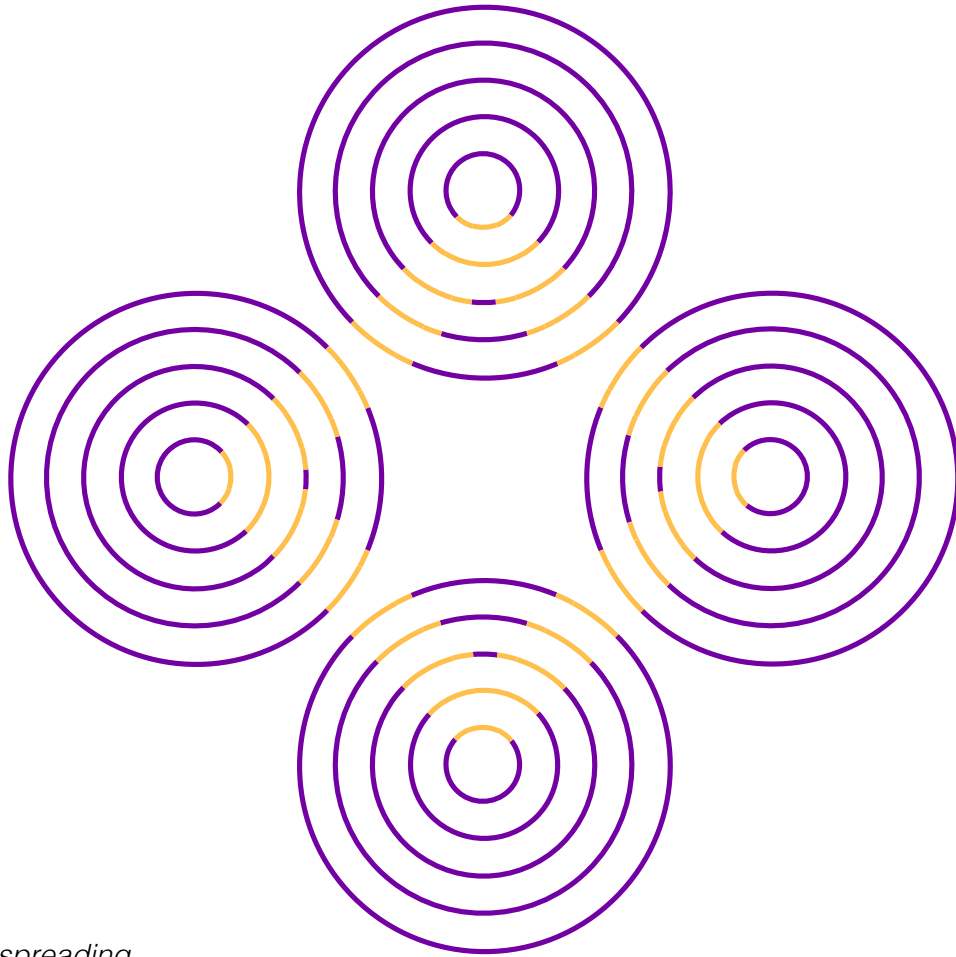
by John S. Werner, PhD

Visual illusions can be so powerful that we believe what we see even when we ‘know better.’ Take the stripe in the center of the figure below. It appears darker than the flanking stripes. Now place a pencil over each border and you will see that all three stripes have the same gray. Now remove the pencils, and the darkness of the center stripe can no longer be seen as identical with the surrounding stripes even though you know they are the same – except at the edges where the border is darker on the center side and lighter on the flanking side. Apparently, the appearance of the center is defined by the edges, and the visual system assigns a brightness, or fills-in between, based on the brightness at the edges.



*Area contrast effect discovered independently by Craik, O'Brien and Cornsweet*

Filling in also occurs with colors. A beautiful example is called ‘neon color spreading.’ In the example (*page 7*), cover two adjacent yellow contours and note that you see the same white between them as you see in the rest of the white background. The yellow spreading between contours to form a diamond pattern is in your brain, not on the paper. This occurs because the color spread from thin yellow connecting lines fills in across the gaps much like neon light.



*Neon color spreading*

The importance of these illusions goes beyond mere curiosity. Dr. Werner in our Eye Center sees them as probes (noninvasive tools) to understand the computations that the visual system undertakes in a wide range of circumstances. For example, the fibers of the optic nerve leaving the eye to pass signals to the visual brain will create a blind spot in the visual field. This blind spot is bigger than the image of 20 full moons, and yet we seldom notice it. We also often fail to notice retinal damage for the same reasons; missing information becomes filled in through long-range interaction by neural signals at the edge.

From research by psychologists and physiologists, we know that filling-in happens at higher levels of the visual cortex, not within the eye. Proper assessment of a scotoma (blind spot), for example, requires tests that are not affected by filling-in, such as can happen in the Amsler grid used to monitor age-related macular degeneration. Losses in vision may be underestimated by the natural filling in by the brain, but more research is required to explain why. It is an important topic of ongoing basic research not just in psychophysics and perception, but also in visual neurophysiology and applied clinical ophthalmology.



**ANN MADDEN RICE:**

# **LEADING THE MEDICAL CENTER WITH A VISION**

by Mark J. Mannis, MD



California's capital is a long way from Iowa, but Ann Madden Rice followed her career across the country in 2006 to take on the leadership of UC Davis Medical Center as Chief Executive Officer. Recognized in 2012 as one of the nation's top 120 women health-care leaders and the recipient of numerous industry awards, Rice manages a 619-bed hospital with affiliated clinics in 10 communities, a workforce of 8,000 and an annual budget of \$1.4 billion.

The daughter of a mother who practiced nursing for 50 years and of a father who worked as a firefighter, Rice was connected to health care from early childhood. Attracted to accounting as a freshman at Iowa State University, she went on to earn a master's degree in accounting (1983) at the University of Iowa. She and her husband, Tom Rice, who has a PhD in political science, established their early careers in Vermont, where she worked at a University-affiliated hospital for nine years and then became CFO of a local community hospital. The 13 years spent in Vermont saw the births of their two daughters, Katherine and Charlotte.

The family returned to Iowa, where Rice served as the Chief Financial Officer and Chief Operating Officer for the University of Iowa Hospitals and Clinics, while her husband served as Associate Provost and Dean of Faculty at the University of Iowa. In 2006, she was attracted to UC Davis by the spirit of innovation and the integration of the health system. "It was a good match from the beginning," she points out, made even better by the fact that she truly loves Sacramento and the surrounding region.

When asked what makes UC Davis stand out, Rice states that "the strong collaborative environment, a robust community of high quality physicians, excellence in primary care, and a very solid information technology infrastructure has positioned the medical center very well to weather the present and future challenges of health-care reform." She sees these as strengths that many other medical centers simply do not have. Our nationally designated Cancer Center, huge investments in IT and imaging, and fine departments such as Emergency Medicine and Ophthalmology, among others, makes us unique in the region. In the nation, UC Davis is one of only a few institutions that have made major investments in IT and telemedicine, and this will likely continue as we go forward.

For the immediate future, Rice sees our biggest challenge as the increasing need for greater collaboration with the community. With only 13% of the inpatient market share, UC Davis nonetheless provides nearly 60% of the indigent care in the region. Responding effectively to the community-wide challenges related to indigent and uninsured populations will require more holistic community participation and collaboration.

Of the Eye Center, Rice points out that, "I am a very satisfied patient." She sees the Eye Center as one of the "triple threat" departments at UC Davis: providing excellent clinical care, great education, and high quality investigational science.

Managing a system of this size that has so many moving parts is a consuming task. By her own admission, she works a lot—in fact, most of the time. But Rice has found a strong community of friends in Sacramento. She is an avid gym aficionado, which keeps her fit and mentally clear.

Despite her huge responsibilities at UC Davis Medical Center, she also manages to serve on several national, regional and local boards. She is on the Executive Committee and chairs the Audit and Corporate Operations Committee of the University Health System Consortium. She serves as an elected delegate from District 9 to the American Hospital Association's Regional Policy Board, and the California Senate appointed Rice to the California Health Facilities Financing Authority. She is secretary/treasurer of the Hospital Council of Northern California, which she will chair beginning in 2015. Rice is immediate past chair of the Sacramento Area Commerce and Trade Organization and serves on the Executive Committee of the Sacramento Metro Chamber.

For Ann Madden Rice, no day is without challenges, some of which are quite daunting. But she has assembled a strong and reliable administrative team and keeps her focus squarely on the goal. Even with the bumps in the road, she is guided by her vision of making UC Davis Medical Center recognized as the great regional and national health-care system that it is. We thank her for her strong leadership.

The logo for 'enVISION GREEN' features the word 'enVISION' in a bold, green, sans-serif font. The letter 'O' in 'VISION' is replaced by a circular graphic containing a stylized sunburst or leaf pattern. To the right of 'enVISION', the word 'GREEN' is written vertically in a smaller, green, sans-serif font. The background of the top half of the page is dark with large, faint, circular sunburst patterns.

# enVISION GREEN

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# OPTICAL SHOP NOW OPEN

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# OPHTHALMOLOGY AND THE SCHOOL OF VETERINARY MEDICINE

by Christopher Murphy, DVM, PhD



*Until one has loved an animal, a part of one's soul remains unawakened.*

*-Anatole France*

The Department of Ophthalmology & Vision Science at UC Davis has world-class clinicians in comprehensive ophthalmology and a wide array of specialties. Children with strabismus, patients with neuro-ophthalmic disorders, glaucoma, diabetic retinopathy, corneal disease, cataract, lid disfiguration, cancer affecting the tissues behind the eye, or

simply an individual in need of optical correction using contact lenses, glasses or corneal refractive surgery, can all receive expert care from our talented staff of physicians and optometrists, as long as the patient is a human. But what about eye care for the other >50,000 species of vertebrates (fish, amphibians, reptiles, mammals and birds) with which we share

this planet? The eye care for all non-human species is also in good hands with our colleagues across the causeway in the section of Comparative Ophthalmology at the Veterinary Medical Teaching Hospital.

The section of Comparative Ophthalmology at UCD is the largest academic unit of its kind in the world. There are 5 board-certified veterinary ophthalmologists as well as 4 residents and 2 full-time technicians. The service has over 2,000 patient visits annually and sees a diverse array of species. The majority of patients are dogs followed by cats, exotic animals (exotic pets, wildlife and captive zoo animals), horses and agricultural animals (cattle, goats and sheep). The clinical service is embedded within the Veterinary Medical Teaching Hospital and has state of the art diagnostic and surgical facilities for delivering the highest level of ocular health care. Lid surgery is the most common external ocular surgery, and cataract extraction with implantation

1. Brad Holmberg, DVM, PhD (former UC Davis Resident) and Stephanie Beaumont, DVM (former UC Davis Resident) taking a photo of corneal lesions of a sea lion at Marine World-Africa USA in Vallejo, CA.



2. Seth Eaton, VMD (former UC Davis Resident) observing a bald eagle patient about to undergo cataract extraction surgery using phacoemulsification.

3. Sara Thomasy, DVM, PhD, DACVO performing a slit lamp examination of a cockatoo.

of an intraocular lens (using the same instrumentation and techniques as those used in human patients) is the most common intraocular surgery performed.

The section of Comparative Ophthalmology has numerous intersecting interests and durable ties to the Department of Ophthalmology & Vision Science at the Health System. A partial list of shared activities includes:

**Grand Rounds:** Since 1985 the section of Comparative Ophthalmology has annually hosted Comparative Ophthalmology Grand Rounds in coordination with the School of Medicine (SOM). These Grand Rounds have focused on a wide array of ocular topics including ocular diseases of zoo animals (hosted at the Sacramento Zoo), ocular conditions in fish, reptile ophthalmology, ocular diseases in birds of prey, and this past year, ocular conditions of laboratory animals. Also in this past year, a second Grand Rounds was coordinated with the SOM by Michele Lim, MD, Ivan



Schwab, MD and Chris Murphy, DVM, PhD that focused on ocular diseases that can be transmitted between household pets and humans (and vice versa).

**Faculty:** In 1987, Mark Mannis, MD took on his 1st corneal fellow, Chris Murphy, DVM, PhD. Dr. Murphy then became a faculty member in the department focusing on the study of corneal diseases, after which he moved on to the University of Wisconsin for 18 years. He returned in 2009 with a primary appointment in the Department of Ophthalmology & Vision Science at the School of Medicine and cross-appointed at the School of Veterinary Medicine.

**Research:** David Maggs, DVM, a recognized expert in herpetic eye disease in cats, has co-authored two cover articles for the British Journal of Ophthalmology with Dr. Schwab. Dr. Murphy co-manages a large interdisciplinary laboratory along with Paul Russell, PhD, a world-renowned vision scientist expert in glaucoma and the drainage pathways for fluid in the human eye. Dr. Murphy has published numerous papers with Dr. Mannis on diverse topics and has also published with Larry Morse, MD, PhD and Ivan Schwab, MD. He has on-going projects in common with corneal specialists Jennifer Li, MD, Mark Mannis, MD and Ivan Schwab, MD. Kathryn Good, DVM is conducting clinical trials investigating stem cell therapies for dry eye, a common condition in dogs and humans.

**Training:** Drs. Murphy and Mannis led the residents' training forum for the American College of Veterinary Ophthalmologists and Drs. Li, Mannis, and Schwab participated in delivering an advanced corneal microsurgery course to the veterinary ophthalmologists at the same meeting in coordination with Dr. Murphy and Steve Hollingsworth, DVM. Additionally, Dr. Murphy and Sara Thomasy, DVM, PhD are working with Drs. Mannis and Li, along

with Lily Koo-Lin, MD, Jeffrey Caspar, MD and Nandini Gandhi, MD in the Department of Ophthalmology & Vision Science to create an innovative microsurgical training course for both physician and veterinary ophthalmology residents. This course is being developed at an opportune time to take advantage of the Department's soon-to-be-opened, state-of-the-art Lanie Albrecht Microsurgical Training Laboratory at the School of Medicine.

Above is just a small sampling of the numerous ties that enrich the environment for ocular care and vision science at UCD. Between the School of Medicine and Veterinary Medicine, the very best in eye care is available for "All creatures great and small," at UCD.





5

4. An equine patient with a protective eye shield (EyeSaver®) after corneal laceration repair.

5. Steve Hollingsworth, DVM, DACVO and Kim Sotelo, CVT examining one of the many canine patients seen by the comparative ophthalmology service.

*“If there are no dogs in Heaven, then when I die I want to go where they went.”*

*-Will Rogers*



# 36<sup>th</sup> Annual UC Davis Eye Center Symposium

For more than three and a half decades, the Eye Center has produced a top-flight clinical meeting that is now nationally recognized for destination and quality content. This year's event in Napa was no exception, attracting participants from all over the country. Keynote speakers included Steven Gedde, glaucoma specialist from the Bascom Palmer Eye Institute and our own Tom Glaser from the Department of Cell Biology and Human Anatomy at UC Davis. Entitled, "Ophthalmology 2013: Are You At the Top of Your Game?" The lectures featured a broad range of subjects from glaucoma to macular disease, from pediatric ophthalmology to practice management, and from a review of clinical trials to the highlights of the UC Davis Grand Rounds cases and Journal Club. The meeting provided a unique opportunity for participants from around the region and the country to meet and interact with UC Davis faculty.

The 37th Annual Symposium will take place June 6-8, 2014 at the Napa Valley Marriott Hotel.

**1. Nandini Gandhi, MD, Annie Baik, MD,  
Jennifer Li, MD**

**2. Joseph Zeiter, MD, Michael Schermer, MD,  
Nora Moore Jimenez**

**3. Frank Sousa, MD, Ed Hernandez, MD,  
Ernest Tark, MD**

**4. Tom Glaser, MD, PhD, Yao Liu, MD,  
Michele Lim, MD, Roma Patel, MD,  
Steven Gedde, MD**

**5. Khizer Khaderi, MD, MPH, Nandini Gandhi,  
MD, Harinderpal Chahal, MD**

**6. Lori Collins, Andrea Gray, MD,  
Mark Mannis, MD**

**7. Francisco Garcia-Ferrer, MD,  
Mark Mannis, MD**

**8. Tom Glaser, MD, PhD, Mark Mannis, MD**





## Second Annual Resident



The Second Annual Resident & Alumni Symposium of the UC Davis Eye Center took place on Saturday, June 15, 2013. The day, celebrating the research efforts by our residents and fellows, was highlighted by two special presentations—the Byron Demorest Memorial Lectureship and the Alumnus of the Year Lecture. The Demorest Lecture, established to commemorate the leadership of the department's first chair, was delivered by Susan Day, MD, renowned pediatric ophthalmologist, Chair and Program Director for the Department of Ophthalmology at the California Pacific Medical Center.

Neil Kelly, the first graduate of the UC Davis residency program was honored with the Alumnus of the Year Award. Kelly, whose contribution of macular hole surgery transformed the field of vitreoretinal surgery, presented a history of his professional path to contributing a new and important technique in ophthalmic surgery.

The residents and fellows presented their research projects, which were ably discussed by members of the Sacramento and Davis practice communities. Celebrating the academic



## & Alumni Symposium



achievements of our residents, fellows, and our ophthalmic community was at the center of the day's activities and were a source of pride for the Eye Center.

1. From left to right; Harinderpal Chahal, MD, Peter Wu, MD, Bobeck Modjtahedi, MD, Eric Chin, MD, Judith Sabah, MD, PhD, Mark Mannis, MD, Vivian Lien, MD, Shabnam Taylor, MD, Alena Reznik, MD, Annamieka Leary, MD, Roma Patel, MD



2. MJ Kelly, Neil Kelly, MD, Mark Mannis, MD

3. Esther Kim, MD, Jim Livingston, Michael Schermer, MD, Lyn Livingston

4. Dr. Mannis presenting Susan Day, MD with the 2<sup>nd</sup> Annual Byron Demorest Lectureship Award

5. Ann Kohl, Judy Mannis, Phyllis Demorest, MJ Kelly

# TO HAVANA



## WITH A MISSION OF EDUCATION

by Mark J. Mannis, MD

Stepping off the charter flight at Havana's Jose Marti Airport—less than an hour's flight from Miami—is a step back in time and the entry into a country of immensely rich history, pathos, warm and welcoming people and an uncertain but promising future.

Dr. Mark Mannis, in his role as President of the Pan-American Association of Ophthalmology (PAAO), along with a team, largely composed of UC Davis Eye Center faculty, visited Havana to represent the PAAO and participate in the

XV Annual Congress of the Cuban Society of Ophthalmology. The Pan-American Association of Ophthalmology is the world's largest supranational association of ophthalmologists with over 15,000 associate members from 26 nations from North, Central and South America as well as the Caribbean. Dr. Mannis, Chair of the UC Davis Eye Center, has served as its president for the past two years.

The UC Davis delegates at the meeting, along with Dr. Mannis, included James Brandt, MD (glaucoma specialist); Jennifer Li, MD (cornea specialist); John Werner, PhD (vision scientist); Francisco Garcia-Ferrer, MD (cornea specialist); and

Dennis Cortes, MD (visiting international research fellow). Other participants in the Davis delegation were collaborators from Miami, Chicago, Lima, and Mexico City.

The purpose of the trip was to bring the Eye Center's expertise to the congress and to foster good will between Cuban ophthalmologists and colleagues from the rest of the Americas. To some extent, even medical science has suffered from the embargo that has been in place since the Cuban Revolution, and the purpose of the visit was to foster clinical scientific exchange with the Cuban ophthalmology community.

In addition to participating in the academic meeting, the UC Davis team visited three eye hospitals and met with local ophthalmologists to learn about eye care in Cuba and its challenges. Two of these institutions were multi-specialty clinics, and the third was dedicated to the treatment of retinitis pigmentosa, a rare inherited disorder of the retina. Cuban ophthalmology is a fascinating

mix of advanced surgical ophthalmology but with significantly limited resources for the delivery of care, in spite of a government that totally subsidizes national health care.

Havana is a beautiful coastal city with a charming historical old town noteworthy for its stunning architecture as well as neighborhoods with large numbers of elaborate and beautiful art deco mansions. Now in a state of distinct decay and dilapidation, they were once the havens of Cuba's wealthy sugar barons and the playground of the rich and famous from the United States and Europe.

Like its political future, the course of ophthalmology in Cuba remains unclear. However, the Cubans are a people of hope and ingenuity—a combination of characteristics that bodes well for the future. The Eye Center staff was pleased to work toward re-building bridges, colleague to colleague, in Cuba, so politically distant but our next-door neighbors nonetheless.



**1** Dr. Jennifer Li addressing the Cuban National Congress along with other members of the UC Davis faculty.



**2** Pan-American Association of Ophthalmology delegation led by UC Davis faculty: (left to right): Mapy Padilla (PAAO, Lima Peru); Marian Macsai MD (University of Chicago); Jennifer Li MD (UCD); Mark Mannis MD (UCD); Dennis Cortes MD (UCD); Victor Perez MD (University of Miami); Francisco Garcia-Ferrer MD (UCD); John Werner PhD (UCD); and James Brandt MD (UCD)



**3** Visiting ophthalmology institutions in Havana: Staff of the Retinitis Pigmentosa Foundation.



society for the blind  
Removing Barriers. Building Independence. Changing Lives.

# SOCIETY FOR THE BLIND: RECLAIMING INDEPENDENCE AND DISCOVERING NEW POSSIBILITIES

by Liz Culp

Vision loss can make someone's whole world feel small. One can feel isolated and alone, and fear a loss of independence. At the Sacramento Society for the Blind (SFTB), those with low vision or blindness discover a place of hope, support and opportunity.

"When people come here, they think that life as they knew it is over," says Shari Roeseler, Executive Director. "They learn that they can be independent and have

really full lives. They also have a lot of fun."

For nearly 60 years, the Society for the Blind has served the needs of people who are blind and visually impaired. Assisting our clients in reclaiming independence and discovering new possibilities despite loss of vision is at the heart of what we do. The SFTB helps 3,500 people in the greater Sacramento area each year. About one-third of its 40

staff members are blind, and this has proven to be a very powerful mentoring model. Through a variety of programs, people of all ages practice cane travel, daily living skills, and working with computers and adaptive software.

"The future is showing that the need for the Society's services are only going to increase," says Roeseler. "We want to increase our outreach to the more than 30,000 blind and low



vision residents of the Sacramento region.”

Most recently, the Society has partnered with the UC Davis Eye Center and is providing eligibility assessments for the Implantable Miniature Telescope for patients with end-stage macular degeneration. Also, beginning this fall, UCD Health System will include a rotation in SFTB’s Low Vision Clinic for first-year Residents.

This summer, the Society for the Blind partnered with Junior Blind to host a weeklong summer leadership camp for blind youth ages 16-24. Participants had a day of classes at the Society that included learning daily living skills and assistive technology. As the only agency in the region providing rehabilitation services to our blind and visually impaired community, we embrace our responsibility

and are proud to lead the way in this effort with partnerships like the one we have with the UC Davis Eye Center.

Shari Roeseler  
Executive Director  
Society for the Blind

1238 S St  
Sacramento, CA 95811  
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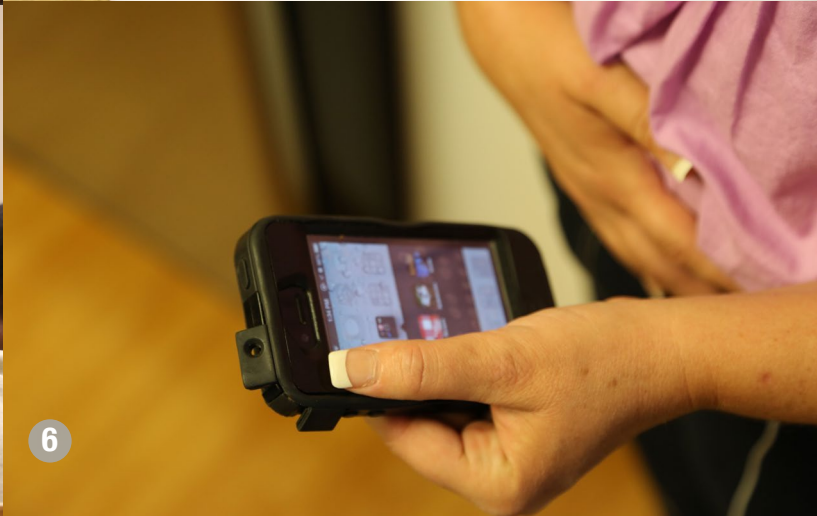
Blind and low vision students at Society for the Blind learn the blindness skills needed to plan and prepare meals in our onsite instructional kitchen consisting of three individual kitchen bays set up to resemble a home kitchen with all the appliances and tools we use every day. Taught by blind and low vision instructors in a peer to peer style, students are shown ways to read recipes, go shopping, measure ingredients, and prepare and serve nutritious meals using special equipment, adaptive techniques, Braille and tactile markings for non-Braille readers.

1. Roland works on the recipe of the day during an Independent Living Skills (ILS) class. Students like Roland attend ILS classes that focus on learning the skills they need to remain self-sufficient despite the change in their vision.
2. Mary uses the Braille she's learned to locate ingredients needed for her recipe.
3. Marking food labels with Braille stickers is a Core Blindness technique taught to students learning to safely navigate the kitchen.
4. Nancy chops vegetables for the casserole she is preparing using the skills learned to safely use a knife. Instructors teach students to use conventional appliances and kitchen utensils to prepare fresh and nutritious meals.
5. Youth transitioning to adulthood participate in Summer program to learn skills, needed to become independent as they begin college or move into their own home.
6. Learning to use Adaptive Technology (computer software, magnification devices, GPS, etc.) allows youth, adults and seniors who are blind and low vision to remain active and independent.
7. Society for the Blind instructor, Liz Campos, demonstrates the out-of-the-box accessibility of iPhones and the various tool available for individuals who are blind or have low vision.





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7



“Giving is a way to promote the best life for all”

- David Motes, CPA  
UC Davis Eye Center  
Advisory Council  
Vice Chair

by Nora Moore Jimenez

# GRATEFUL PATIENT LEGACY GIFT

David Motes is driven to help Sacramento institutions that he cares about, and his connection to UC Davis Health System reaches back to the very beginning. In the late 1970's, David was one of the region's community leaders to volunteer as an advocate for the newly established UC Davis Medical Center. His first connection to the UC Davis Eye Center was through Joan Hadley who served as the department's development professional, and Dr. John Keltner, then chair of the department.

It wasn't until 2010, when Dr. Mannis, chair, and Dr. Li, as a fellow, performed cornea transplant surgery to correct his keratoconus, that David experienced the advantages of being a patient at an academic teaching hospital. David and his wife, Charlene, are both supporters of the UC Davis Health System. “We believe that the care provided to patients at the UC Davis Health System is better because the

research conducted at the campus results in better care at the Medical Center. UC Davis has established a culture of caring across the enterprise. The caregivers' breadth of knowledge, and the standard-of-care and attention provided to patients across the institution, instill confidence that they will take the very best care of us and of others”.

David, a native of Sacramento, first met Charlene as students at Sacramento High School. It wasn't until Charlene began her public accounting career that she and David met again. “He recognized me immediately but said not a word and it took me awhile until I realized we had known each other as kids.” This year the couple celebrated their 33<sup>rd</sup> anniversary.

As a CPA, David has spent his career helping individuals with income and estate tax planning. David and Charlene both learned at an early age the positive impact philanthropy

can have, and they believe in giving as a way “to promote the best life for all”. David helps his clients understand the benefits of planned giving as a financial strategy for supporting causes they believe in while preserving generational wealth.

David and Charlene have made plans to support the UC Davis Eye Center by establishing an endowment through a legacy gift.

“The permanence of this gift supporting cornea research and the university means a great deal. We have been blessed during our lives and we feel that it is time to pass that on and it is our hope that this money will help others with blinding cornea disease.”

Despite millions of dollars being spent on keratoconus, no one truly knows the cause of the disease. David and Charlene's gift may change that.



# YOUR PHILANTHROPIC SUPPORT AT WORK!

by E. Antoinette McLean

The financial support and commitment we receive from our patients, members of the community, faculty and alumni is remarkable and appreciated. Philanthropic support not only allows us to continue to maintain our leadership in vision technology and research but it also provides support for seed funding innovative new initiatives and educating future leaders in vision care. Transformative ways that philanthropic support has aided the UC Davis Eye Center include:

- \$80,000 from the Fosse Endowed Fund helped build a live cell-imaging device critical for understanding cell biology in the eye and has also provided important gap funding for research initiatives.
- \$50,000 gift from a generous donor allowed Dr. Susanna Park to enroll two patients into her clinical trial that employs regenerative medicine to treat macular degeneration.
- Generous support funded a resident's training in Bangladesh at the Islamia Eye Hospital. Funds such as these are a critical component of our advanced degree programs providing them with a wide variety of clinical experiences.
- A very gracious gift from a grateful patient has allowed us to establish a state-of-the-art microsurgical training laboratory now under construction.
- Continued philanthropic support propels UC Davis Eye Center and makes the difference between being average at what we do and being great at what we do. Thank you for your support.

# UC DAVIS EYE CENTER FACULTY

## LEADERSHIP



**Mark J. Mannis, M.D.,  
F.A.C.S.**  
Professor, Cornea, External  
Disease, Chair  
Research Interests: Corneal  
transplant technology, eye &  
skin diseases, and artificial  
corneas.



**Jennifer Li, M.D.**  
Assistant Professor, Cornea,  
External Disease and  
Refractive Surgery  
Research Interests:  
Endothelial keratoplasty and  
keratoprosthesis surgery.



**Michele C. Lim, M.D.**  
Professor, Glaucoma  
Vice-Chair, Medical Director  
Research Interests:  
Glaucoma patient  
compliance focusing on  
medication adherence and  
drug delivery.



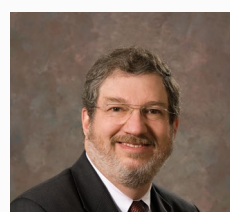
**Mark J. Mannis, M.D.,  
F.A.C.S.**  
Professor, Cornea, External  
Disease, Chair  
Research Interests: Corneal  
transplant technology, eye &  
skin diseases, and artificial  
corneas.

## CORNEA, EXTERNAL DISEASE AND UVEITIS



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

## GLAUCOMA



**James D. Brandt, M.D.**  
Professor, Glaucoma  
Director, Glaucoma Service  
Research Interests:  
Nanotechnology for  
innovation in glaucoma  
treatments.



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



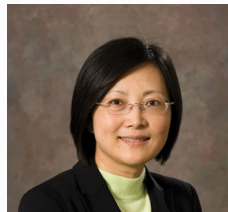
**Michele C. Lim, M.D.**  
Professor, Glaucoma  
Vice-Chair, Medical Director  
Research Interests:  
Glaucoma patient  
compliance focusing on  
medication adherence and  
drug delivery.

**“The service at this facility has always been efficient, friendly, and professional.”**

## COMPREHENSIVE OPHTHALMOLOGY



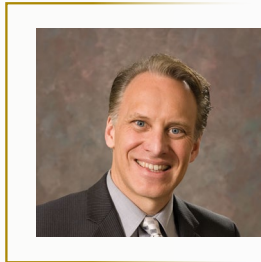
**Jeffrey J. Caspar, M.D.**  
Professor, Comprehensive  
Ophthalmology and  
Refractive Surgery  
Director, Residency Program  
Research Interests: Cataract  
surgery after refractive  
surgery and new techniques  
for cataract extraction.



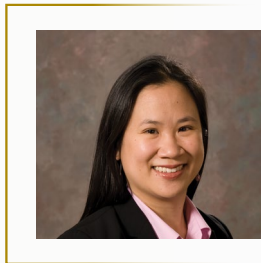
**Esther S. Kim, M.D.**  
Professor, Comprehensive  
Ophthalmology  
Director, Optometric  
Services  
Research Interests:  
Improvement of  
technology in cataract  
surgery.

# UC DAVIS EYE CENTER FACULTY

## REFRACTIVE

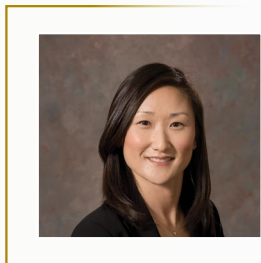


**Jeffrey J. Caspar, M.D.**  
Professor, Comprehensive Ophthalmology and Refractive Surgery  
Director, Residency Program  
Research Interests: Cataract surgery after refractive surgery and new techniques for cataract extraction.



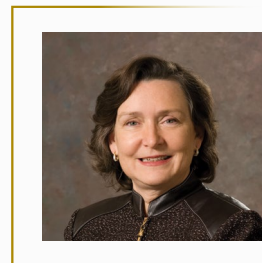
**Jennifer Li, M.D.**  
Assistant Professor, Cornea, External Disease and Refractive Surgery  
Research Interests: Endothelial keratoplasty and keratoprosthesis surgery.

## OPHTHALMIC PLASTICS

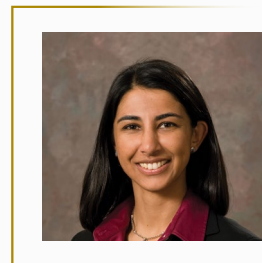


**Lily Koo Lin, M.D.**  
Associate Professor, Oculoplastic Surgery  
Research Interests: Improvement of aging eyelids and the relationship between the orbital globe and trauma.

## PEDIATRICS AND ADULT STRABISMUS



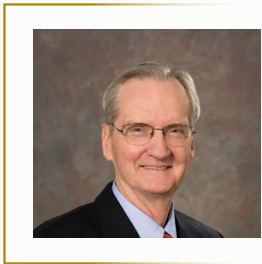
**Mary A. O'Hara, M.D., F.A.C.S., F.C.A.P.**  
Professor, Director, Pediatric Ophthalmology and Strabismus Service  
Research Interests: Development of new technology in pediatric strabismus.



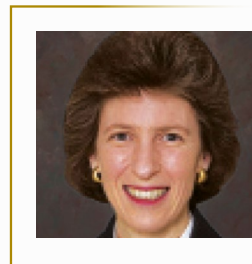
**Nandini Gandhi, M.D.**  
Assistant Professor, Pediatric Ophthalmology and Strabismus  
Research Interests: International ophthalmology and curriculum development abroad.

**“Good staff – good people  
– good doctors.”**

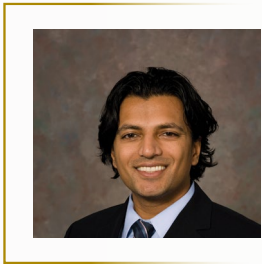
## NEURO-OPHTHALMOLOGY



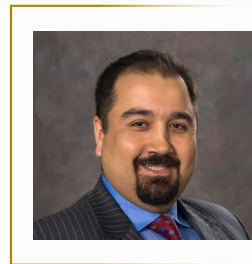
**John L. Keltner, M.D.**  
Distinguished Professor,  
Chair Emeritus, Neuro-  
Ophthalmology  
Research Director  
Research Interests: The  
effects of multiple sclerosis  
(MS) and cancer on vision.



**Linda J. Margulies, M.D.**  
Professor, Vitreo-retinal  
Disease, Veterans  
Administration, Martinez  
Research Interests: New  
treatments for age-related  
macular degeneration.

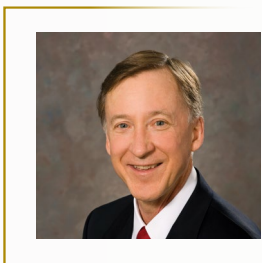


**Syed Khizer Khaderi, M.D.,  
M.P.H.**  
Assistant Professor,  
Neuro-Ophthalmology  
Research Interests:  
Genetic diseases of the  
optic nerve and visual  
psychophysics.

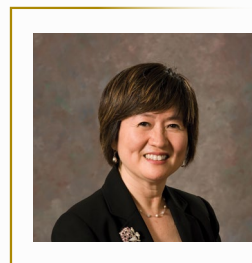


**Ala Moshiri, M.D., Ph.D.**  
Assistant Professor, Vitreo-  
retinal Surgery  
Research Interests: Genetic  
diseases of the retina.

## VITREO-RETINA



**Lawrence S. Morse, M.D.,  
Ph.D.**  
Professor, Vitreo-retinal  
Surgery and Uveitis  
Director, Retina Service  
Research Interests:  
Treatments for diabetic  
retinopathy, age-related  
macular degeneration and  
retinal degeneration.

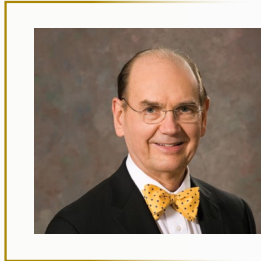


**Susanna S. Park, M.D.,  
Ph.D.**  
Professor, Vitreo-retinal  
Surgery  
Research Interests:  
Age-related macular  
degeneration Proton  
beam treatments, and  
stem cell therapies.

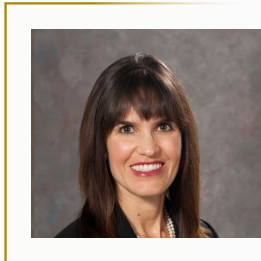


# UC DAVIS EYE CENTER FACULTY

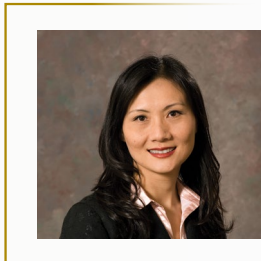
## OPTOMETRISTS



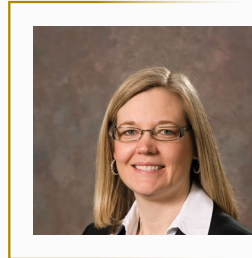
**Thomas B. Barnes, O.D., M.S., F.A.A.O.**  
UC Berkeley School of Optometry  
Principal Optometrist



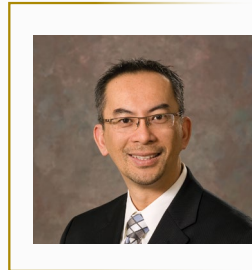
**Melissa Barnett Erickson, O.D., F.A.A.O.**  
UC Berkeley School of Optometry  
Principal Optometrist



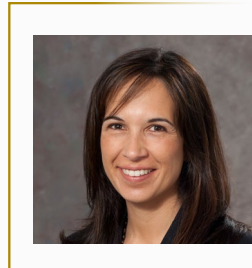
**Brooke S. Chang, O.D.**  
UC Berkeley School of Optometry  
Senior Optometrist



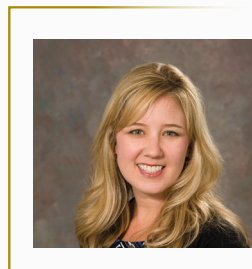
**Larisa Johnson-Tong, O.D., F.A.A.O.**  
UC Berkeley School of Optometry  
Senior Optometrist



**Hai Tong, O.D.**  
University of Missouri, St. Louis School of Optometry  
Senior Optometrist

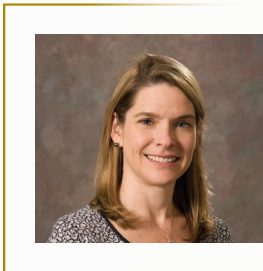


**Marcia Nearing, O.D., F.A.A.O.**  
New England College of Optometry  
Senior Optometrist

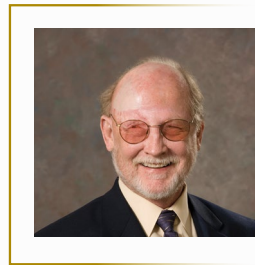


**Kaaryn Pederson-Vanbuskirk, O.D., F.A.A.O.**  
UC Berkeley School of Optometry  
Senior Optometrist

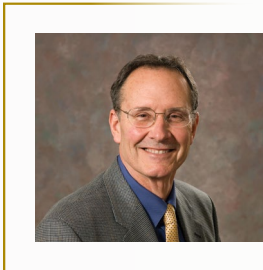
## VISION SCIENTISTS



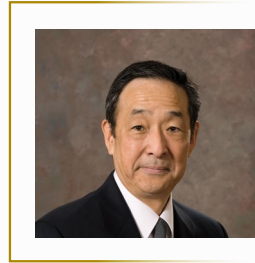
**Marie E. Burns, Ph.D.**  
Professor, Retinal Physiology  
Research Interests: Photo transduction, photoreceptor adaptation, and protein movement.



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



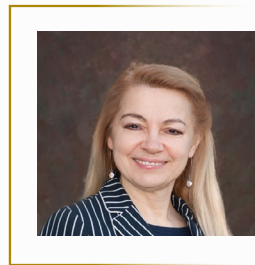
**Paul FitzGerald, Ph.D.**  
Professor, Cell Biology and Human Anatomy  
Director, Center for Visual Sciences  
Research Interests: The role of intermediate filaments in the biology of the ocular lens.



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



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



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

# UC DAVIS EYE CENTER FACULTY



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



**Charles E. Thirkill, Ph.D.**  
Adjunct Professor Emeritus, Immunology & Biology.  
Research Interests: Ocular immunology, retinal and optic nerve imaging techniques.



**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.

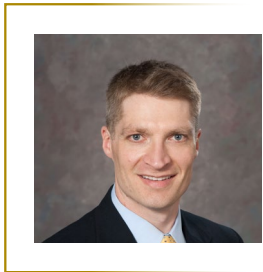


**Robert J. Zawadzki, Ph.D.**  
Associate Researcher, High Resolution Retinal Imaging.  
Research Interests: Retinal and optic nerve imaging techniques.

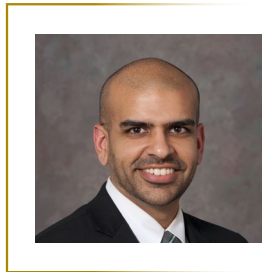


**Min Zhao, M.D., Ph.D.**  
Professor, Regenerative Cures.  
Research Interests: The role of endogenous electric fields to stimulate cell migration, corneal wound healing and regeneration.

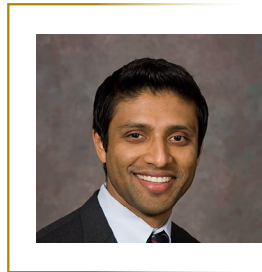
# RESIDENTS AND FELLOWS



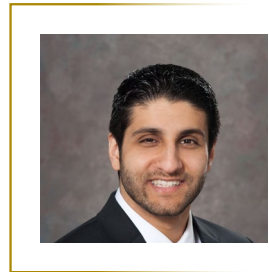
Rory T. Allar, M.D.  
Clinical Glaucoma Fellow



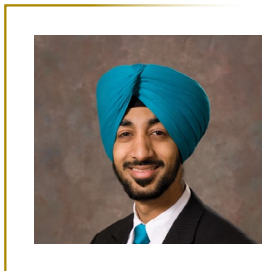
Paramdeep S. Mand, M.D.  
Clinical Cornea Fellow



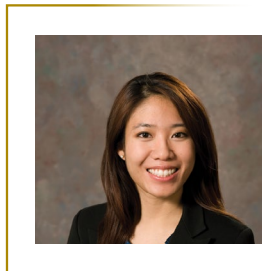
Amar P. Patel, M.D.  
Clinical Retina Fellow



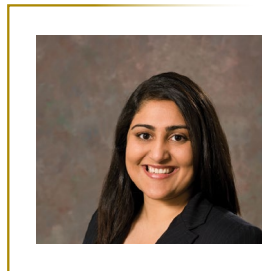
Sumeer Thinda, M.D.  
Clinical Retina Fellow



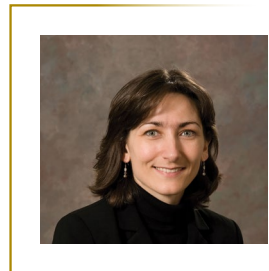
Harinderpal Chahal, M.D.  
Third Year Resident



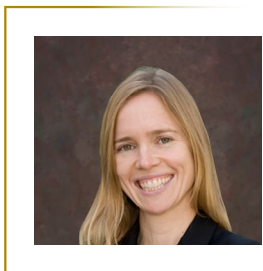
Vivian Lien, M.D.  
Third Year Resident



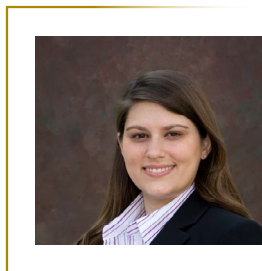
Roma Patel, M.D.  
Third Year Resident



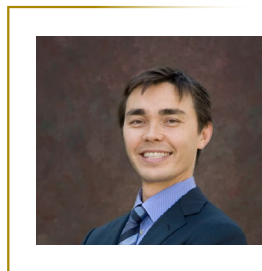
Judith Sabah, M.D., Ph.D.  
Third Year Resident



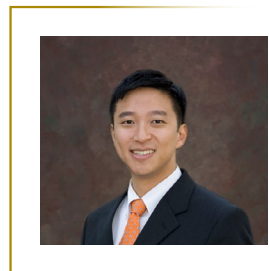
Annamiika Leary, M.D.  
Second Year Resident



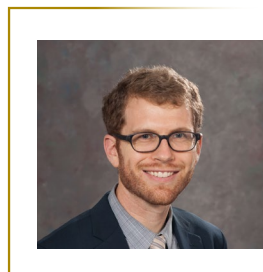
Shabnam Taylor, M.D.  
Second Year Resident



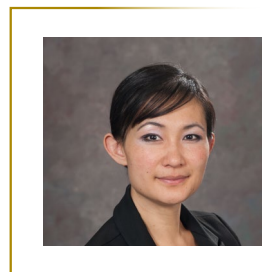
Jeffrey Willis, M.D., Ph.D.  
Second Year Resident



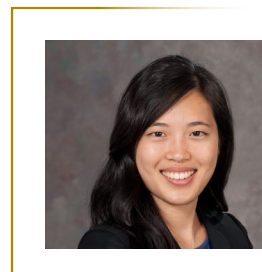
Peter Wu, M.D.  
Second Year Resident



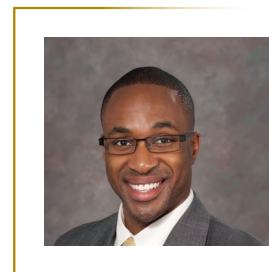
Nathaniel Gebhard, M.D.  
First Year Resident



Kimberly Gokoffski, M.D., Ph.D.  
First Year Resident



Natasha Kye, M.D.  
First Year Resident



Kingsley Okafor, M.D.  
First Year Resident

# OPTOMETRY @ STUDENT HEALTH SERVICES NOW OPEN



The UC Davis Eye Center is pleased to announce the opening of a new clinic in Davis. Located within the newly constructed Student Health Services Building, this clinic is dedicated to fulfilling the optometric eye care needs of registered UC Davis students. With a fully staffed clinic and an optical shop, we have truly developed a one-stop service that is equipped to accommodate eyeglass prescriptions, contact lenses, and basic eye ailments. This is an exciting new partnership between the Eye Center and the main campus and we are proud to serve this vibrant section of the UC Davis community!



**MELISSA BARNETT ERICKSON,  
O.D., F.A.A.O.**

# Lasik Surgery

## Seeing is believing!

**Put some action back in your active lifestyle!**

Explore the maximum potential of your vision by scheduling a consultation with a UC Davis Eye Center Lasik surgeon today! At the UC Davis Eye Center we strive to do what is best for your individual vision needs. Is refractive surgery the best option for you? Whatever the answer, rest easy in placing your vision in the hands of our internationally renowned team of academic surgeons. Call 916.734.6650 or schedule an appointment online at [www.ucdmc.ucdavis.edu/lasik](http://www.ucdmc.ucdavis.edu/lasik)

