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enVISION

News from the UC Davis Health System Eye Center



Byron Demorest, M.D., Founding Chair of the UC Davis Department of Ophthalmology

By Mark J. Mannis, Professor of Ophthalmology and Chair, UC Davis Eye Center



This year, we lost one of the great leaders of American ophthalmology and surely Sacramento's pre-eminent practitioner. We celebrate the remarkable life of our dear friend, colleague and teacher, Byron Demorest. Many wonderful things, all well-deserved, can be said about Byron and his very special role in the ophthalmic community of our region.

He was a true visionary with a "can do" attitude—the attitude that fueled his founding of the Department of Ophthalmology at UC Davis. While dedicated to quality medical care in the private sector, he recognized, early on, the need for an academic center of ophthalmology in the State Capital. Serving as the founder and first chair of the department, he forged a strong bond between the community of practitioners and UC Davis, an institution to which he was dedicated throughout his career. The fledgling department that he began in the mid-1960s—now the UC Davis Eye Center—has over 20 full-time clinicians and research faculty and has become one of the premier training programs in the country.

In the days following his passing, many colleagues called and wrote the Department to share their memories of Dr. Demorest. One individual wrote: "Byron Demorest was the epitome of focused, positive energy as a physician, a teacher,



and a human being...

He lived his life as we all should: sharing, inspiring, and loving everything he did and everyone around him...We are very blessed to have been part of his world..."

In addition to his role with UC Davis, Dr. Demorest was a skilled and admired pediatric ophthalmologist with a busy practice in Sacramento. He was also a national leader in the ophthalmology field. He served as an associate examiner for the American Board of Ophthalmology and was a leader in many professional groups, including the California Academy of Eye Physicians and Surgeons and as president of the American Academy of Ophthalmology. In 1973, he was president of the Sacramento County Medical Society.

Byron's booming voice that for decades signaled the start of Grand Rounds at UC Davis will not be forgotten nor will his candor and unflinching insistence in the ophthalmic community on doing the right thing by our patients and our community.

Byron's legacy will reverberate through the coming decades, as the many residents in whose training he participated and the colleagues with whom he shared the practice of our profession in Sacramento carry on what he taught us—in his practice, the lecture hall, grand rounds, the Alta Society, and as a leader of organized American ophthalmology.

We are all grateful and better to have known and worked with Byron Demorest, and we extend our condolences to Phyllis, his wife of 64 years, his three children, and all of his family.

The Unique Experience of Receiving Care at a Teaching Hospital



In the midst of busy clinics, when I am followed into a room by a retinue of residents, fellows, and medical students, patients will often ask me about how teaching hospitals work: “Why do I have to see another doctor before I see Dr. Mannis?”; “Are these guys really doctors? (They seem so young)”; “Do you check everything that they do to make sure it is correct?”; and perhaps the most common question, “Is the young doctor going to be the one who does my surgery or are you going to do my surgery, Dr. Mannis?”.

There is no question that receiving care at a “teaching hospital” is a different experience from visiting a private practitioner’s office. Like everything, it has some advantages and some disadvantages. From the patient’s standpoint, one disadvantage is that it is rarely as efficient and streamlined as a visit to a private office. There is the repetition of examinations, time taken for discussion and demonstrations, and often additional testing that might not be available in a private office. That is the price of teaching. Among the list of advantages, on the other hand, is that the patient benefits from the expertise of highly-trained specialists and receives what is essentially several “second opinions” during the course of the examination.

Here at the UC Davis Eye Center, teaching is a centerpiece of our program. Trainees at every level—medical students, residents, clinical fellows, and researchers—are part of our mission to educate the next generation of eye care practitioners and vision scientists. They are carefully chosen to study here, while also, providing the very best in clinical care under direct faculty supervision.

What are our teaching responsibilities? At the level of our medical students, we offer training in basic ophthalmic examination skills, and, for those who elect to enhance their ophthalmic education, rotations in basic or more advanced

ophthalmology or vision research. Our residents, after completing medical school and a year of internship in general medicine, spend three years with us, training in all aspects of medical and surgical ophthalmology, equipping them to leave UCD as very competent comprehensive ophthalmologists. And our fellows, training in the specialties of cornea, glaucoma, or retina, spend 1-2 years after residency becoming very specialized experts in their field.

But teaching at the Eye Center is not limited to the clinic. Our program also has a National Eye Institute-funded Training Grant, and many of our basic researchers have doctoral and post-doctoral students training in the techniques of basic vision science.

So, what this means is that the patient who comes to the UC Davis Eye Center enters a place where curiosity, transmission of information, the newest clinical and the most sophisticated scientific techniques blend with compassionate care. This blend provides both the highest level of clinical service as well as the real possibility that unsolved problems may find a solution in this place. Although more costly and less streamlined than private health care delivery, we strongly believe that the nurturing of inquisitive minds is an added value for our patients. Teaching at the Eye Center is only an extension of the amazing resources provided by the Health System and by the University in general. But we view our investment in the future of eye care as a very important mission and one in which we will surely continue to invest.

Mark J. Mannis, MD, FACS

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www.ucdmc.ucdavis.edu/eyecenter
or call (916) 734-6435.

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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.

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.

Directory

UC Davis Health System Eye Center

4860 Y St., Suite 2400
Sacramento, CA 95817

UC Davis Eye Center Optical Shop

4860 Y St., Suite 2013
Sacramento, CA 95817
(916) 734-6300

UC Davis Medical Group, Roseville

2261 Douglas Blvd.
Roseville, CA 95661

UC Davis Eye Services

77 Cadillac Dr.
Sacramento, CA 95825

To Schedule Patient Appointments:

(916) 734-6602 (*Patient All Sites*)
(916) 734-6992 (*FAX*)
(916) 734-6650 (*Laser Vision Correction Services*)

2010 Donor List Corrections:

Visionary Gold (\$100,000+)

Macular Degeneration Foundation, Inc.

Visionary Silver (\$50,000+)

Foundation Fighting Blindness

Senior Counselor \$(5,000+)

Eye Bank Association of America

Chair's Council 2010 (\$1,000+)

Ann L. Kerr

Silver Circle (100+)

Kevin Chang, D.D.S. and Brooke Chang, O.D.

Mary Beth Tasker, M.D. Research Fund

Barbara Arnold, M.D. & Henry Go, M.D.

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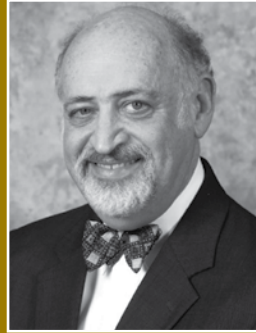
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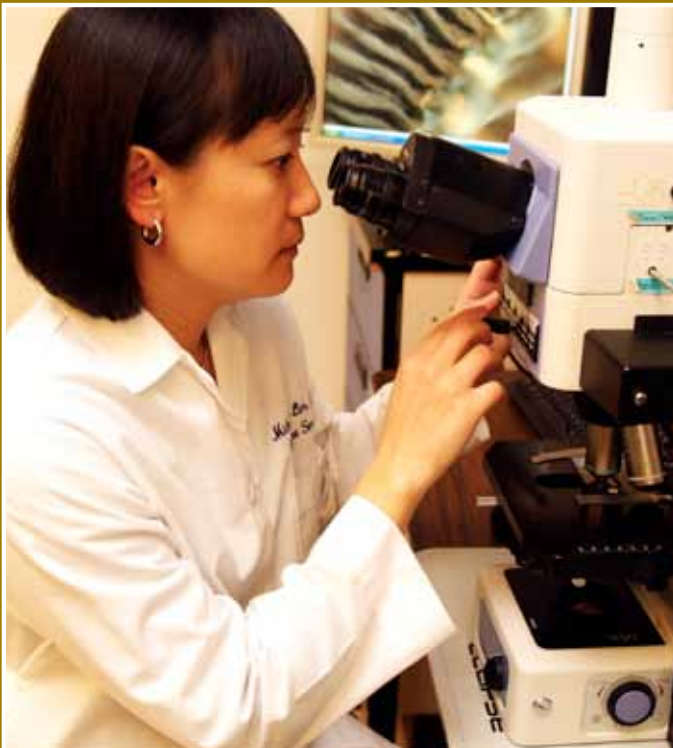


Professor and Chair

Mark J. Mannis, M.D., F.A.C.S.
Director, Cornea Service.

Research Interests: Corneal Transplant
Technology, Eye & Skin Diseases, &
Artificial Corneas.

Dr. Mannis, Professor and Chair of the UC Davis Health System Eye Center, specializes in corneal transplantation and external diseases of the eye. His residency was completed at Washington University, St. Louis, Missouri, and his cornea and external eye disease fellowship was completed at University of Iowa, Iowa City, Iowa. His research has included the development of experimental antimicrobial agents and growth factors that affect the corneal wound healing rate, skin diseases that affect the eye, and outcomes of corneal transplants and artificial corneas. Dr. Mannis has authored over 125 publications and five books on topics relating to corneal surgery and disease.



Associate Professor and Vice-Chair

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

Research Interests: Drug delivery in
glaucoma drops and patient compliance.

Dr. Lim specializes in the medical and surgical treatment of glaucoma in both children and adults. As Vice-Chair and Medical Director for the department, she oversees clinic operations. Dr. Lim completed her ophthalmology residency at UCLA's Jules Stein Institute and a fellowship at the University of Miami's Bascom-Palmer Eye Institute. Dr. Lim believes that patients and their physicians should work together as a team to achieve their treatment goals. The more information a patient has regarding his or her disease, the more involved that patient will be in their own medical care. She encourages patients to ask questions about their glaucoma eye care in order to stay informed. Her research has focused on medication adherence (whether a patient takes their medication on schedule) among glaucoma patients.

Annie K. Baik, M.D.

Assistant Clinical Professor,
Glaucoma, Veterans
Administration, Mather.

Research Interests: Emerging
glaucoma surgical techniques,
patient education.



Dr. Baik is a glaucoma specialist, treating both adults and children. She holds joint appointments at UC Davis Eye Center and the Sacramento Veterans Affairs Medical Center, Mather. After completion of her residency at University of Texas, Houston, Dr. Baik completed a glaucoma fellowship here at UC Davis. Her connection with UC Davis inspired her to return to the academic community. Dr. Baik is committed to resident education and mentorship as well as patient education and collaborative clinical care. In the past, she has presented her research at the American Glaucoma Society, and she retains an active interest in advances in the surgical management of glaucoma.

James D. Brandt, M.D.

Professor, Glaucoma,
Director, Glaucoma Service.

Research Interests:
Nanotechnology
for innovation in glaucoma
treatments.



Dr. Brandt specializes in medical and surgical treatments of glaucoma in adults and children. His residency was completed at the University of Southern California after which he completed fellowships at Wills Eye Hospital and Harvard Medical School-Eye Research Institute. Dr. Brandt has research interests in both the clinical and basic realms. He is actively involved in large clinical trials investigating new medical and surgical treatments of glaucoma and new technologies for diagnosing the disease. In the basic research arena, Dr. Brandt is currently collaborating with Dr. Tingrui Pan of the Department of Biomedical Engineering to develop new MEMS and Nanotechnology-based devices for the diagnosis of glaucoma.

Jeffrey J. Caspar, M.D.

Clinical Professor, Comprehensive
Ophthalmology and Refractive
Surgery, Residency Program
Director.

Research Interests: Improvement
of techniques in cataract surgery.



Dr. Caspar is a comprehensive ophthalmologist, treating a wide variety of ophthalmic disorders. He specializes in small-incision cataract surgery using the latest technologies, including multifocal and astigmatism-correcting lens implants. He also specializes in laser vision correction, including custom and conventional LASIK, PRK, LASEK and clear-lens extraction. He is involved in research on cataract surgery after refractive surgery and new techniques for cataract extraction. Dr. Caspar helps train other ophthalmologists in advanced cataract surgery techniques and refractive surgery. Dr. Caspar completed his residency at UC Davis.

Francisco J. Garcia-Ferrer, M.D.

Associate Professor, Cornea,
External Disease and Refractive
Surgery, Veterans Administration,
Mather.

Research Interests: New
technology for refractive
surgery.



Dr. Garcia-Ferrer specializes in cornea, external disease and refractive surgery. As chief of the eye section at the Sacramento VA Medical Center, Dr. Garcia-Ferrer is involved in advanced cataract surgery techniques, corneal transplantation, and the medical management of glaucoma and retinal diseases. His UC Davis practice focuses exclusively on keratorefractive surgery, including LASIK and PRK. Dr. Garcia-Ferrer's research interests have included the development of molecular techniques to diagnose corneal infections. Current interests include developing new strategies to improve patient access to care and clinic efficiency.

Nandini Gandhi, M.D.

Assistant Professor, Pediatric Ophthalmology and Strabismus.

Research Interests:

International ophthalmology and curriculum development abroad.



Dr. Gandhi joined the UC Davis faculty after completing her fellowship in pediatric ophthalmology and strabismus at the Duke Eye Center. Her commitment to academic medicine is born of her interest in teaching and medical education. She is also interested in international ophthalmology and curriculum development abroad. Her current clinical interests include comprehensive pediatric ophthalmology and adult strabismus.

John L. Keltner, M.D.

Professor, Chair Emeritus Neuro-Ophthalmology, Research Director.

Research Interests: The effects of multiple sclerosis (MS) and cancer on vision.



Dr. Keltner is an internationally known Neuro-ophthalmologist, who specializes in the diagnosis and treatment of complex unexplained neurological abnormalities affecting visual pathways. He completed residencies in ophthalmology, neurology, and internal medicine and fellowships in pediatric-ophthalmology and neuro-ophthalmology. He served as Chair of the UC Davis Department of Ophthalmology and Vision Science for over 25 years, and he is currently the Director of Research and Faculty Development for the UC Davis Eye Center. Dr. Keltner has many research interests, for example, autoimmune-related retinopathies, optic neuropathies that affect vision, and Multiple Sclerosis and its affect on vision.

Syed Khizer Khaderi, M.D., M.P.H.

Assistant Professor, Neuro-Ophthalmology.

Research Interests: Genetic diseases of the optic nerve and visual psychophysics.



Dr. Khaderi joined the Eye Center after completion of a Neuro-Ophthalmology Fellowship at the Doheny Eye Institute, University of Southern California. His residency was completed at the University of Arizona College of Medicine. Dr. Khaderi's research focuses on genetic diseases of the optic nerve and on visual psychophysics. Dr. Khaderi owns several patents related to retinal ganglion expression and visual software algorithms, which assist him in his research.

Esther S. Kim, M.D.

Associate Clinical Professor, Comprehensive Ophthalmology, Director, Optometric Services.

Research Interests: Improvement of technology in cataract surgery.



Dr. Kim is a comprehensive ophthalmologist, specializing in cataract surgery. She completed medical school and residency at UC Davis. Dr. Kim chose to stay in academic medicine and teach the next generation of ophthalmologists. She is also the Director of Optometric Services. Her research interests include the improvement of technology in cataract surgery.

Linda J. Margulies, M.D.

Clinical Professor, Vitreoretinal Disease, Veterans Administration, Martinez.

Research Interests: New treatment for age-related macular degeneration.



Dr. Margulies specializes in vitreoretinal diseases and surgery. She completed her ophthalmology residency at UC Davis and a fellowship in vitreoretinal disease at Washington University in St. Louis, Missouri. She has been associated with UC Davis as a faculty member since 1988 and works extensively with ophthalmology residents at the Veterans Administration Hospital in Martinez, California, where she is Director of the Ophthalmology Program.

Jennifer Li, M.D.

Assistant Professor, Cornea, External Disease and Refractive Surgery.

Research Interests: Endothelial keratoplasty and keratoprosthesis surgery.



Dr. Jennifer Li joined the Eye Center in August as a specialist in cornea, external disease and refractive surgery. Dr. Li received her medical degree and ophthalmology residency at the Baylor College of Medicine in Houston, Texas and subsequently completed her cornea fellowship at UC Davis. Following her training, she practiced at the Devers Eye Institute in Portland, Oregon. Her research on corneal surgery, including endothelial keratoplasty and keratoprosthesis surgery, has been presented nationally and internationally. Committed to patient care, research and education, Dr. Li looks forward to rejoining the academic community at UC Davis and the Sacramento ophthalmic community.

Lily Koo Lin, M.D.

Assistant Professor, Oculoplastic Surgery.

Research Interests: Improvement of aging eyelids.



Dr. Koo Lin specializes in ophthalmic plastic and orbital surgery, including disorders of the orbit and lacrimal drainage system as well as cosmetic and reconstructive surgery of the eyelids and eyebrows. Her research includes improvement of aging eyelids and the orbital globe relationship and trauma. Dr. Koo Lin completed her residency in ophthalmology at Harvard Medical School and completed an ophthalmic plastic, orbital, and reconstructive surgery fellowship at Doheny Eye Institute in Los Angeles, California. Dr. Koo Lin is a board-certified ophthalmologist and a member of the American Society of Ophthalmic Plastic and Reconstructive Surgery.

Lawrence S. Morse, M.D., Ph.D.

Professor, Vitreoretinal Surgery and Uveitis, Director, Retina Service.

Research Interests: Treatments for diabetic retinopathy, age-related macular degeneration and retinal degeneration.



Dr. Morse is the Director of the VitreoRetinal Service and specializes in vitreoretinal disease and surgery with an emphasis on macular degeneration. He completed his Ph.D. in Virology at University of Chicago and continued his education, completing his ophthalmology residency at Jules Stein Eye Institute, UCLA and his retina fellowship at Duke University. In addition to his clinical work, Dr. Morse has been involved with over 20 clinical studies. He has also authored over 120 publications, been invited to teach at over 85 courses and spoke at over 100 meetings around the world.

**Mary A. O'Hara, M.D., F.A.C.S.,
F.C.A.P.**

Professor,
Pediatric Ophthalmology.
Research Interests: Development
of new technology in pediatric
strabismus.



Dr. O'Hara is the Director of Pediatric Ophthalmology. She specializes in pediatric ophthalmology, treating amblyopia and strabismus, cataracts, anterior segment disorders, and adult strabismus. Dr. O'Hara completed her ophthalmology residency at Brooke Army Medical Center and her pediatric ophthalmology and strabismus fellowship at Wills Eye Hospital, Philadelphia, Pennsylvania. Her clinical research interests include amblyopia and motility disorders.

Susanna S. Park, M.D., Ph.D.

Professor, Vitreoretinal Surgery.
Research Interests: Proton beam
treatments for age-related
macular degeneration, anti-VEGF
treatment for age-related macular
degeneration, retinal imaging and
stem cell therapies for age-related
macular degeneration.



Dr. Park is a vitreoretinal specialist who provides both surgical and medical management of all vitreoretinal disorders including macular degeneration, diabetic retinopathy, retinal detachment, posterior uveitis and trauma. She also treats patients with intraocular tumors including the use of proton beam irradiation for ocular melanomas and chemotherapy for retinoblastomas. She completed her ophthalmology residency and retinal fellowship at Massachusetts Eye & Ear Infirmary at Harvard University. Dr. Park is interested in using new imaging techniques to study macular disorders and in developing new treatments for retinal disorders including macular degeneration and diabetic retinopathy. She has participated in over 33 clinical trials.

Alan M. Roth, M.D.

Professor Emeritus, Ophthalmic
Pathology.



Dr. Roth is active in pathology research. He completed two residencies, the first residency in ophthalmology at the Veterans' Administration Hospital, Long Beach; the second residency in pathology at UCLA. He also completed an NIH Special Fellowship in ophthalmic pathology at Jules Stein Eye Institute, Los Angeles.

Ivan R. Schwab, M.D., F.A.C.S.

Professor Emeritus, Cornea, External
Disease and Uveitis.

Research Interests: Limbal
stem cell transplants and
comparative anatomy.



Dr. Schwab specializes in cornea and external disease and uveitis. Dr. Schwab completed his residency and cornea fellowship at Pacific Medical Center, San Francisco. He is one of eighteen Directors of the American Board of Ophthalmology, the certification and re-certification agency for Ophthalmologists in the United States. He is on the editorial board of the journals, *Cornea* and *The British Journal of Ophthalmology*, and he is active as a member of the American Academy of Ophthalmology. His research interests have focused on stem-cell grafting, wound healing and comparative ophthalmology. He is the author of over 120 articles, 4 books, 12 book reviews, 19 book chapters, and has just released a new book, titled, "Evolution's Witness".

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

Assistant Professor,
Vitreoretinal Surgery.

Research Interests: Stem cell for
age-related macular degeneration,
VEGF immunology of retinal
degeneration.



**The Eye Center Faculty
and Staff would like to
thank our patients and
donors for your support
and confidence!**

Dr. Telander is a specialist in the diseases and surgery of the retina, vitreous, and macula. He completed his residency at University of Minnesota and his retina fellowship at Jules Stein Institute, UCLA. Dr. Telander has been involved in over 27 clinical trials, including investigations of new treatments for Age-Related Macular Degeneration (AMD) and Diabetic Retinopathy. He continues to study novel ways (including stem cell therapies) to treat and prevent AMD, inherited retinal degenerations, and retinal scarring processes related to retinal detachment.





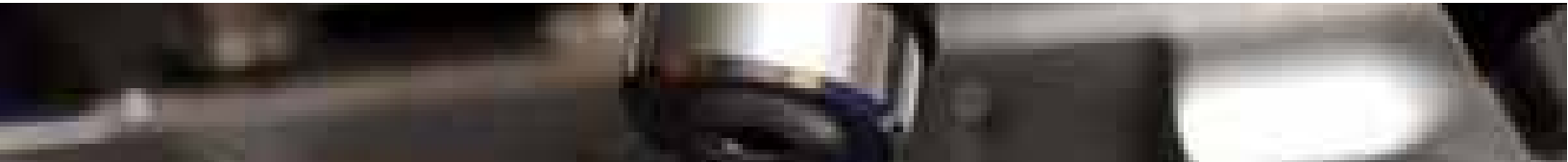
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O.D., F.A.A.O.
UC Berkeley School of Optometry
Principal Optometrist



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



Marie E. Burns, Ph.D.
Professor, Retinal Physiology,
Director, Center for
Visual Sciences.
Research Interests: Physiology.



Trained as a biochemist and electrophysiologist, Dr. Burns studies the temporal regulation of signal transduction mechanisms in neurons. She received her Ph.D. from Duke University and did fellowships at Stanford University. Much of her work has investigated the deactivation of the G protein cascade in photoreceptor cells of the retina. Her future studies will seek to understand the mechanisms by which different G protein cascades yield signals of varying amplitude and durations, such as in the rod and cone photoreceptors in the retina.

Paul FitzGerald, Ph.D.
Professor, Biochemistry, Molecular,
Cellular & Developmental Biology.
Research Interests: The role of
intermediate filaments in the
biology of the ocular lens.
[http://www.ucdmc.ucdavis.edu/
cellbio/faculty/fitzgerald](http://www.ucdmc.ucdavis.edu/cellbio/faculty/fitzgerald)



Dr. FitzGerald is studying the unusual biological requirement of optical clarity in the lens of the eye. How that is achieved is not fully understood, but a very high degree of structural order and uniformity is considered essential. Dr. FitzGerald's laboratory has identified two proteins that are very divergent members of the intermediate filament family of proteins that assemble into a unique cytoskeletal element called the beaded filament. Both of these proteins and the beaded filament are expressed only in the lens. Dr. FitzGerald received his Ph.D. in Cell Biology and Anatomy from UCLA.



Larissa Johnson-Tong,
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Hai Tong,
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University of Missouri, St. Louis School
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Kaaryn Pederson-Vanbuskirk,
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Mark S. Goldman, Ph.D.
Associate Professor, Neuroscience.
Research Interests: Computer
models of eye movement.
[http://neuroscience.ucdavis.edu/
user/172](http://neuroscience.ucdavis.edu/user/172)



Dr. Goldman studies and builds mathematical and computer models of a variety of brain functions. In relationship to the visual system, Dr. Goldman investigates how neurons in the early visual system represent and encode information about objects in the external world. His work focuses primarily on a model system for studying such activity, the oculomotor neural integrator, in which transient eye movement commands are accumulated into persistent neural signals that control the horizontal position of the eyes. More recently, he has also been studying the role of the cerebellum in controlling the plasticity of oculomotor responses. Dr. Goldman holds a Ph.D. from Harvard University.



Leonard Hjelmeland, Ph.D.
Professor, Ophthalmology.
Research Interests:
Epigenetics of age-related
macular degeneration.
[http://biosci3.ucdavis.
edu/FacultyAndResearch/
FacultyProfile.aspx?FacultyI
D=336.aspx?Researcherid=13](http://biosci3.ucdavis.edu/FacultyAndResearch/FacultyProfile.aspx?FacultyID=336.aspx?Researcherid=13)

Dr. Hjelmeland's research focuses on the study of cellular changes that cause age-related macular degeneration (AMD). His work is particularly concentrated on the epigenetics of the disease. Dr. Hjelmeland's laboratory was recently awarded a 3-year, \$1.8 million grant from the National Eye Institute to study the cellular changes that cause age-related macular degeneration. He has authored over 120 publications and has been invited to speak at over 50 meetings and conferences. Professor Hjelmeland received his Ph.D. in Biophysical Chemistry from Stanford University.

Andrew T. Ishida, Ph.D.

Professor, Retinal electrophysiology.

Research Interests:

Light adaptation, ganglion cell excitability, ion channel modulation, retinal immunohistochemistry.

<http://neuroscience.ucdavis.edu/user/26>



Dr. Ishida studies how action potentials and voltage-gated ion currents are modulated by slow neurotransmitters in retinal ganglion cells. Vertebrate retinas use fast neurotransmitters to signal moment-to-moment changes in the distribution of incident light. Retinas contain an additional set of neurotransmitters which operate on slower time scales to modulate signal flow and processing. His laboratory research focuses on studying the intraretinal transmission of dopamine and on understanding how dopamine alters ganglion cell excitability. Dr. Ishida received his Ph.D. from UCLA.

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

Professor, Comparative Ophthalmology.

Research Interests: Bio-physical cueing and modulation of cell behaviors.

<http://faculty.vetmed.ucdavis.edu/faculty/cjmurphy/>



Dr. Murphy's laboratory is interdisciplinary with strong collaborative ties to the schools of Medicine, Veterinary Medicine and Engineering. He has four areas of research ongoing in his laboratories: 1) The modulation of cell behaviors and corneal wound healing by trophic factors, 2) The modulation of cell behaviors by topographic features of the substratum, 3) Comparative ocular functional morphology, 4) The development of improved solutions for organ storage prior to transplantation. Dr. Murphy received both his Ph.D. and D.V.M. from Cornell University, New York. He also completed both a Veterinary medicine residency and a cornea fellowship at UC Davis.

Charles E. Thirkill, Ph.D.

Adjunct Professor Emeritus, Immunology & Biology.

Research Interests:

Ocular immunology, retinal and optic nerve imaging techniques.



Dr. Thirkill's research includes auto-immune retinopathy and cancer-associated retinopathy. He has published over 37 journal articles on topics in ocular immunology. Dr. Thirkill holds a Ph.D. degree from the University of Oklahoma in microbiology, and completed a post-doctoral appointment at Yale University.

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.

<http://vsri.ucdavis.edu>



Professor Werner's research focuses on visual psychophysics, the structure and the function of the visual system. Dr. Werner studies the neurophysiological computations and mechanisms that mediate human vision, particularly changes in color and spatial vision across the life span and in association with retinal and optic nerve disease. His work has demonstrated that adaptive modifications of the visual system respond to changes in signals due to aging of the eye's optics and retina. His laboratory has developed state-of-the-art methods for imaging the human retina of the living eye at a cellular scale. Professor Werner holds a Ph.D. degree from Brown University and did post-doctoral studies in physiological optics at the Institute for Perception, Soesterberg, The Netherlands.

Robert J. Zawadzki, Ph.D.

Assistant Researcher,
High Resolution Retinal Imaging.

Research Interests: Retinal
and optic nerve imaging
techniques.

[http:// vsri.ucdavis.edu](http://vsri.ucdavis.edu)



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.

[http://www.ucdmc.ucdavis.edu/
dermatology/research/lab/zhao_
pi.html](http://www.ucdmc.ucdavis.edu/dermatology/research/lab/zhao_pi.html)

Dr. Zawadzki is also involved in studying the aging processes of the eye as well as various types of retinal and ODN diseases. His research interests focus on development of new instrumentation for high-resolution in vivo retina imaging. This includes, but is not limited to, Optical Coherence Tomography (OCT), Scanning Laser Ophthalmoscopy (SLO), or Adaptive Optics (AO). Dr. Zawadzki received a Ph.D. in Natural Science, and completed a Medical Physics fellowship from the University of Vienna, Austria.

Dr. Min Zhao is internationally known for the discovery that the endogenous electric signals fields direct cell migration and growth to heal wounds as one of the most important guidance cues. Dr. Zhao's collaborative work has used multiple approaches to study electric field-directed migration and growth of nerve, blood vessels, epithelial cells, and immune cells. Dr. Zhao received his M.D. degree in Medicine and his Ph.D. in Trauma Surgery from the Third Military Medical University, Chongqing, China.

Thank You!

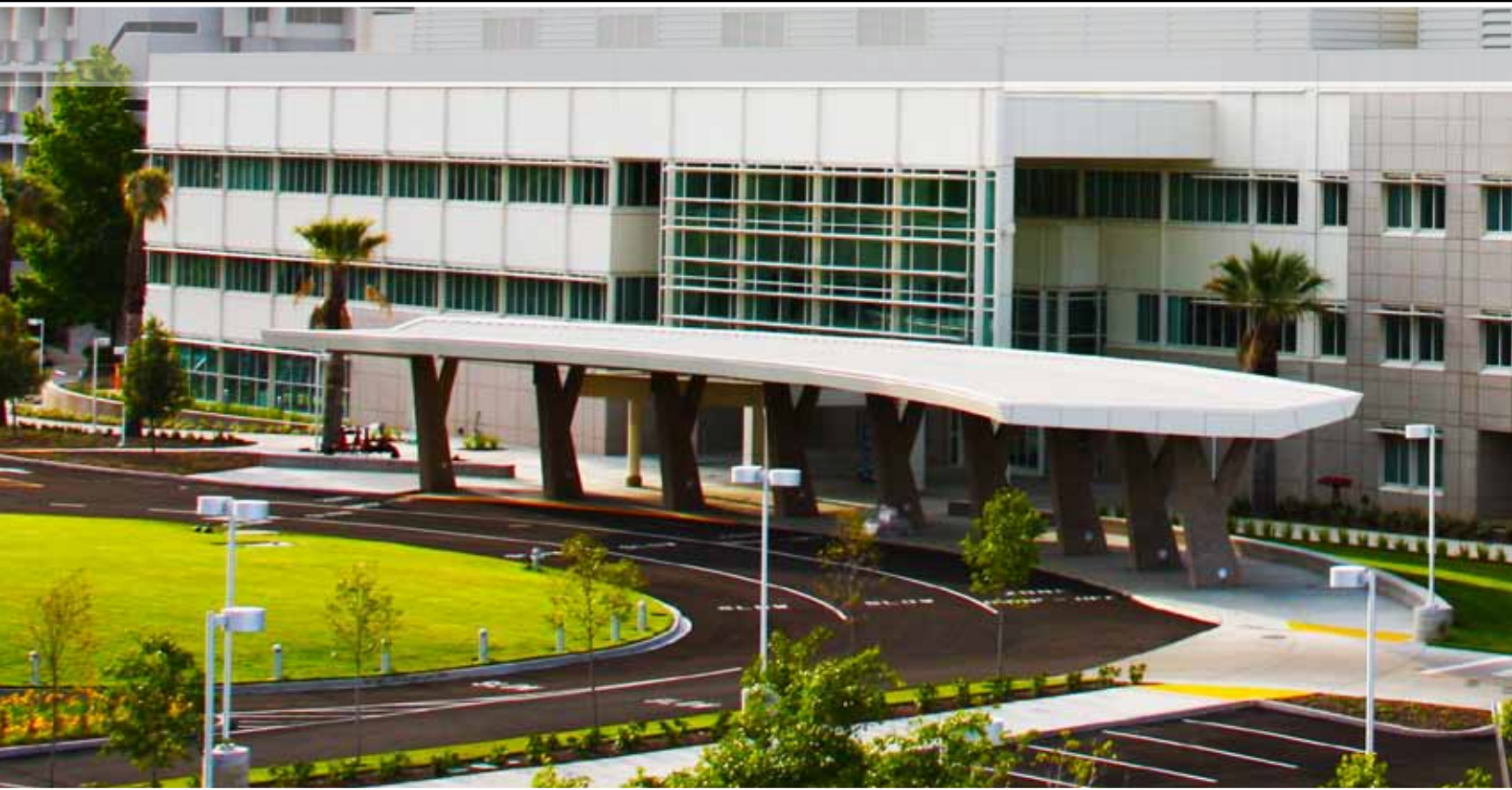
The faculty of the UC Davis Health System Eye Center is deeply grateful to the following Federal Government agencies:

**The National Institutes of Health
The National Eye Institute
The National Institute on Aging**

and

Research to Prevent Blindness, Inc.

**for their long-time and major funding of ophthalmology research
at UC Davis.**



Samuel Lee, M.D.
Third Year Resident



Charles Weber, M.D.
Third Year Resident



Kimberly Wings, M.D.
Third Year Resident



Danli Xing, M.D.
Third Year Resident



Eric Chin, M.D.
Second Year Resident



Bobeck Modjtahedi, M.D.
Second Year Resident



Alena Reznik, M.D.
Second Year Resident



Jennifer Rizzo, M.D.
Second Year Resident



Harinderpal Chahal, M.D.
First Year Resident



Vivian Lien, M.D.
First Year Resident



Roma Patel, M.D.
First Year Resident



Judith Sabah, M.D.
First Year Resident



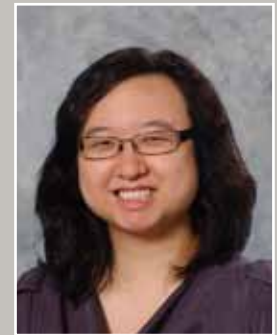
Allan A. Hunter, III, M.D.
Clinical Retina Fellow



Saadia Rashid, M.D.
Clinical Retina Fellow



Brett L. Shapiro, M.D.
Clinical Cornea Fellow



Melissa G. Tong, M.D.
Clinical Glaucoma Fellow

Three New Faculty Members Join Eye Center in 2011



Within just a three-week period in August and September, the UC Davis Eye Center faculty grew by three new clinical faculty members, the first time in 20 years that more than one new faculty member has joined the department in a single year.

Drs. Nandini Gandhi, Khizer Khaderi and Jennifer Li were officially welcomed to the Eye Center with a reception in their honor on Thursday, October 6th, by Dr. Claire Pomeroy, UC Davis Vice-Chancellor for Human Health Science, and Dr. Mark Mannis, Professor and Chair, UC Davis Eye Center. With degrees and training acquired at some of the nation's most prestigious institutions, they bring unique insights and capabilities to their new careers at UC Davis.

**Nandini Gandhi, M.D., Assistant Professor
Pediatric Ophthalmology and Strabismus**

Dr. Gandhi joins the UC Davis Eye Center faculty after completing her fellowship in pediatric ophthalmology and strabismus at the Duke University Eye Center. Her commitment to academic medicine is born of her interest in teaching and medical education, and she is also interested in international ophthalmology and curriculum development abroad. Her current clinical interests include comprehensive pediatric ophthalmology and adult strabismus.



**Khizer Khaderi, M.D., Assistant Professor
Neuro-Ophthalmology**

Dr. Khaderi joins the UC Davis Eye Center Neuro-Ophthalmology Service after completing a Neuro-Ophthalmology Fellowship at the Doheny Eye Institute of the University of Southern California. Dr. Khaderi will provide patient care and resident education, and his research focuses will be on genetic diseases of the optic nerve and visual psychophysics. He owns several patents related to retinal ganglion expression and visual software algorithms.



**Jennifer Li, M.D., Assistant Professor,
Cornea, External Disease and Refractive Surgery**

Dr. Li is a specialist in cornea, external disease and refractive surgery, and she received her medical degree and completed residency at the Baylor College of Medicine in Houston, Texas. She is familiar to UC Davis ophthalmology patients because she completed her ophthalmology fellowship at UC Davis just a year ago, and she returns to the Eye Center after a year in practice at the Devers Eye Institute, Portland, Oregon. Her research on corneal surgery, including endothelial keratoplasty and keratoprosthesis surgery, has been presented nationally and internationally.



The UC Davis Eye Center and all of the University community welcome these outstanding young ophthalmologists to the faculty. Drs. Gandhi, Khaderi and Li are pictured on the cover of this issue of enVision Magazine.

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A New Faculty Publication

Ivan Schwab, M.D., is "Evolution's Witness"

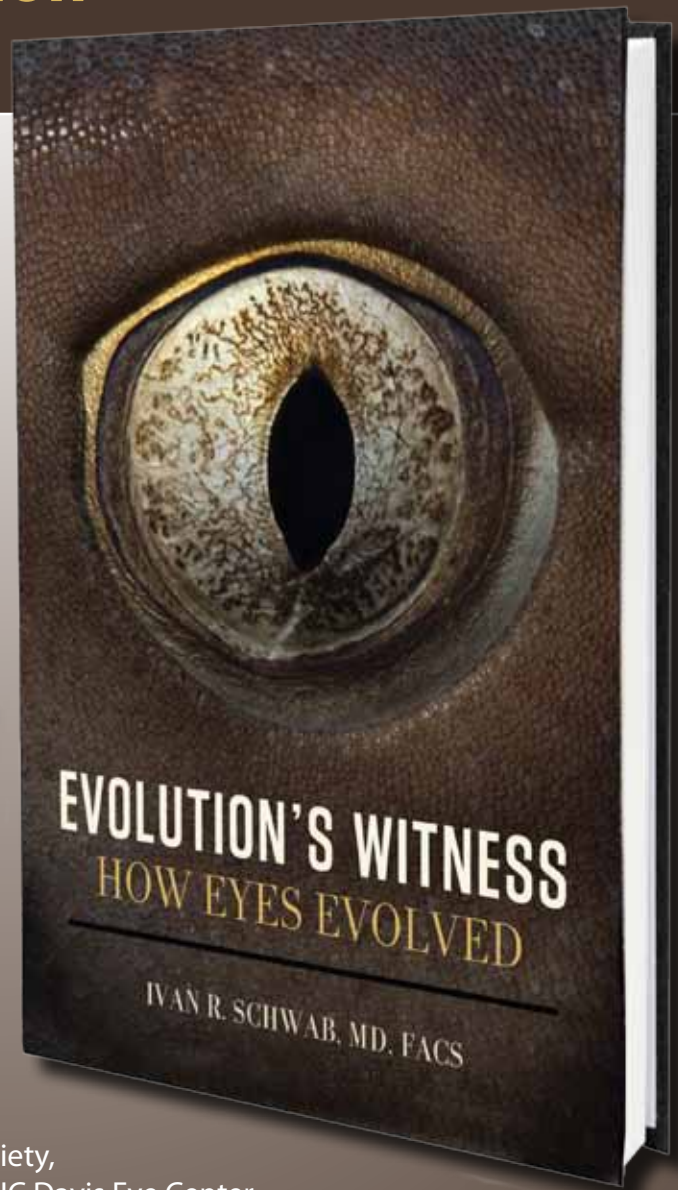
"For over 500 million years, eyes have been "standard equipment for earth's creatures and fundamental to speciation and survival, including human survival. But the history of precursors to the fully formed eye begins 3.75 billion years ago", according to Dr. Ivan R. Schwab, UC Davis Eye Center Faculty member. Dr. Schwab, who is a cornea specialist and has been on the UC Davis faculty for over 20 years, is an avid student of comparative biology. He has just completed his "magnum opus", a new book entitled, "Evolution's Witness—How Eyes Evolved".

Due to be released November 1, the book will incorporate 400 photographs and other images into a text that provides many insights new to science and will illustrate key steps in the evolution of the eye and visual system. Besides Dr. Schwab's photographs of eyes in their almost unimaginable variety, the book will include photographs taken by another UC Davis Eye Center Faculty member, Dr. James D. Brandt, Director of the Eye Center's Glaucoma Service.

According to Dr. Schwab, "I have been interested in natural history for many years. I'm fascinated with what we can learn about ancient creatures, their anatomical development, the world they inhabited, and what that tells us about our world today. I hope that the story of the eye, as presented in my book, will amaze the readers as it has amazed me."

"Evolution's Witness" is being published by Oxford University Press and is available through the Oxford website at <http://www.oup.com/us/catalog/general>, enter "Evolution's Witness".

Other Eye Center Faculty preparing books for publication include Dr. Jack Werner, Distinguished Professor of Ophthalmology, whose book will be published in 2012, and Dr. Mark Mannis, working on the second edition of his book on ocular surface disease, scheduled for publication in 2013.





Residents, Faculty & Fellows Honors and Awards

Mark Goldman, Ph.D.

2011 Outstanding Graduate Mentor in Neuroscience, UC Davis
Neuroscience graduate group

John Keltner, M.D.

2011 Best Doctors in America, Best Doctors, Inc.

Dae Yu Kim, Ph.D.

2011 SPIE Scholarship in Optics and Photonics, International
Society for Optical Engineering
2011 KUSCO-KSEA Scholarship, Korea-US Science Cooperation
Center
2011 SPIE Student Travel Grant, SPIE Photonics West

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

2011 Honored as Outstanding Alumnus of the Year by Washington
University Dept. of Ophthalmology
Named President of the Pan-American Association of
Ophthalmology (2011-2013)

Susanna Park, M.D., Ph.D.

2011 Sacramento Super Doctor

Keltner Presented Distinguished Service Award

Dr. John L. Keltner, Professor and Director of Research and Faculty Development at the UC Davis Health System Eye Center, has been presented the 2011 North American Neuro-Ophthalmology Society Distinguished Service Award. The award is considered the highest honor for members of the Society in the field of neuro-ophthalmology. Dr. Keltner, former Chair of the Eye Center, is a world-renowned expert in his field and is in great demand for consultations, specializing in the diagnosis and treatment of complex neurological abnormalities that affect visual pathways.

Bonnie Dale, a One Woman Crusade for Glaucoma Support Groups

Seven years ago, Bonnie Dale was informed by her Santa Rosa ophthalmologist, Dr. Robert Anderson, that she had Glaucoma and was immediately referred to Dr. James D. Brandt, Director of the UC Davis Eye Center Glaucoma Service. Coincidentally, Mrs. Dale and her husband, the Honorable Robert P. Dale, a former Superior Court Judge in Sonoma County, were preparing for their move to Sun City Lincoln Hills. But life after her diagnosis was never to be the same.

These days she is an effusive, energetic and relentless supporter and advocate for people in her community that have been diagnosed with Glaucoma. But it was not always that way. "I have to admit, that my diagnosis hit me very hard. I focused on all of the things that I would not be able to do as my sight gradually diminished, and for a time, I couldn't think of much else."

An avid watercolorist, Mrs. Dale had planned a trip to paint in Taos, New Mexico, before learning of her Glaucoma, and she considered staying home. However, Dr. Anderson encouraged her to go and "paint while you still can". "So I did, and it was one of the best things I've ever done", she declares.

But still she battled the emotional challenges. Although she looked for support groups for people with the devastating eye disease, there were none at the time except in San Francisco. She consoled herself by researching everything she could about Glaucoma, its treatment and progression, and she continued to see Dr. Brandt. "Dr. Brandt is a real gift to anyone diagnosed with this disease."

Still, it wasn't enough. So just over two years ago, she founded the Sun City Glaucoma Support Group in her own community. The first meeting attracted just six people from among the 11,000+ residents of the "active adult (over-55) community", but the monthly meetings have grown steadily,

and recent attendance has generally exceeded 25 people. Drs. James Brandt and Annie Baik, both of the Eye Center Glaucoma Service, have each made presentations to the Support Group.



Mrs. Dale cites two primary focuses for the group. First, and overwhelmingly important in her view, is to provide emotional support to people recently diagnosed with Glaucoma. It's a terrifying time for many, and having access to other people who have passed through the initial phases of coping with the disease can be very helpful. Second, is to provide encouragement, help, and discipline to people who are finding difficulty keeping on the therapeutic regimens and keeping physically active. "It's so important to simply refuse to give up and to instead, spend your energy re-inventing things that give you pleasure."

Mrs. Dale has been a donor to the Eye Center's Glaucoma Research Fund, and she is a new member of the UC Davis Eye Center Council, helping provide encouragement and support to the Eye Center's fundraising efforts.



Providing Hope for Low Vision Patients: Ronald Cole, UC Davis Volunteer Clinical Faculty

A trained retina specialist and in retina practice for over 20 years here in the State Capital, Dr. Cole moved into his current low-vision specialty in the mid-1990s and has not looked back since. Suggesting that today's retina practice "... allows less personal contact with the patient than patients need", he credits his move to his low vision practice at Medical Vision Technologies (MVT) to his early patient-centered medical training at the University of Rochester Medical School. "I highly prize that kind of education, and ultimately it motivated me to do low vision rehabilitation. Get to know the patient and their needs. You're taking care of the patient's life."

Hailing originally from Ohio, Dr. Cole applied to various Ohio medical schools after college, but his personal doctor suggested he apply to Rochester (his own medical school alma mater). Dr. Cole interviewed and fell in love with the school and its approach, its welcoming and friendly environment and its goal to graduate everyone who started. Instruction was based on the "Biopsychosocial model" which is still being used at the school today.

In 1998, Dr. Cole founded the MVT Vision Rehabilitation Center to provide a variety of services to patients with low vision. This was based on a comprehensive approach including the services of an occupational therapist for patients with permanent vision loss. Dr. Cole's role is to evaluate patients and to put together a plan to help them improve their function given their visual limitations. Sometimes a complete "makeover" is what's called for, but his goal is to help patients find practical adaptations and techniques that compensate for their vision loss. Fundamentally, his work is about having his patients achieve a better quality of life. And the psychosocial part of the approach is very important. "People can't participate fully in their own training if they are depressed and angry about vision loss", he points out.

For the last 52 years, Dr. Cole has been married to his wife Sheri, and they have two children and five grandchildren. Dr. and Mrs. Cole recently hosted the entire family (eleven people, including children ages 9 to 16) in their home for a family recreation week in July (the elder Coles stayed at a local motel for the duration), and Dr. Cole counts the experience as one of the most fun he has ever had. When not helping people overcome vision limitations or entertaining his family, Dr. Cole enjoys "barber shopping", singing in and attending barbershop quartet performances.

But his passion remains low vision services. He has dedicated his career to an area of ophthalmic care that is often neglected by others in the eye care community but which holds enormous importance for the increasing number of patients with macular disease and other forms of visual dysfunction. We applaud his dedication to our community and the needs of the low vision population.





The Indispensable Funder of Vision Research

Research to Prevent Blindness, based in New York City and the nation's largest private funder of vision research, has been the UC Davis Eye Center's most consistent and longest contributing major source of funding. RPB, as it is commonly referred to, has provided over \$2.5 million in discretionary funding to UC Davis in the form of annual grants exceeding \$100,000, and it is this discretionary funding practice that distinguishes RPB from most funding sources. RPB has provided our department chairs unique opportunities to grow vision science at UC Davis.

Conceived as a public foundation, RPB was founded in 1960 by Dr. Jules Stein. Dr. Stein was a remarkable man. He was a musician and a trained ophthalmologist, but also an astute businessman and founder of MCA, Inc., owner of Universal Studios and one of the world's major producers and distributors of television programs, motion pictures, and works of music. Dr. Stein went on to found the Jules Stein Eye Institute at UCLA in 1966 and provided major funding both to RPB and UCLA for vision research and the treatment of eye disease.

UC Davis Eye Center received its first grant from RPB in 1975. Principal Investigator responsible for administering the grant since 2004, Eye Center Chair, Dr. Mark J. Mannis, has used the grant funding for a wide range of research purposes. Over the years, this has included support for technical and research personnel, purchase of laboratory supplies and equipment, travel for the presentation of scientific papers, resident research projects, and faculty project seed money. In addition to the unrestricted research grants,

RPB provides very prestigious awards to individual researchers. Dr. Mannis received an RPB Wasserman Grant in 1995 for his work on antimicrobial agents. Dr. Ivan Schwab has also received a Wasserman Grant, and Dr. Jack Werner has received both a Jules and Doris Stein Professorship Award and a Senior Scientific Investigator Award.

Perhaps the single most important contribution made by Research to Prevent Blindness to the preservation and restoration of sight in the United States was the organization's critical role in the founding of the National Eye Institute (NEI) of the National Institutes of Health, the Federal Government Agency. The NEI has been the single largest funder of vision research in the United States and has led the way for decades in the development and understanding of, and cures for, blinding eye disease.

Today, RPB's dedicated staff continues to raise funds for vision research while building awareness among the general public for the continuing need for more knowledge and more cures. According to Dr. John Keltner, former UC Davis Eye Center Chair and currently Eye Center Research Director, "The contribution of RPB to the success of American vision research is incalculable. Certainly, if Dr. Stein and his friends had not invented it, others would have had to. We at UC Davis are enormously grateful for what RPB has enabled us to accomplish over these last several decades."

Producing Exceptionally Well-prepared Ophthalmologists

With a clear vision and careful planning, the UC Davis Health System Eye Center's residency program has evolved into one of the "premier training programs in the country", states current Eye Center residency program director, Jeffrey Caspar, M.D. Since 1998, Dr. Caspar has held the position of Residency Program Director and oversees all aspects of the residents' training program.

But this is not to say that Dr. Caspar works alone. The Eye Center has world renowned, dedicated, full-time and volunteer clinical faculty who promote and advance each resident's ophthalmic training. This program continually produces exceptionally well-prepared, surgically diverse, outstanding ophthalmologists. Dr. Caspar states, "After completion of residency, residents are able to obtain their top choices for fellowships or jobs. We can find our alumni in many parts of the country and Canada".

The Eye Center has trained 104 residents since the residency program's inception in 1970, 51 under the direction of Dr. Caspar. The program is a three-year, fully accredited, multi-faceted educational program integrating clinical, didactic and research experiences. Currently, the Eye Center has 12 residents. Residents are

given the opportunity to train with faculty in all areas of general and subspecialty ophthalmology. Only one resident trains in a subspecialty at a time, in order to provide one-on-one faculty instruction. In addition to residents' clinical and surgical training, each resident works with a faculty member on a research project that is presented at the annual Eye Center Ophthalmology Symposium. These research projects provide the highly important bridge between research and clinical patient care.

To keep on the path of training excellence, Dr. Caspar would like to establish a state of the art surgical lab. "This surgical lab would include multiple stations, each with a surgical microscope and phacoemulsifier to enhance resident surgical education". He would also like to acquire a EYESi surgical simulator. The EYESi surgical simulator is an ophthalmic virtual reality state-of-the-art surgical training system. Currently, we share a surgical simulator with UC San Francisco.

The UC Davis Health System Eye Center will continue its mission to train outstanding ophthalmologists for future generations to come. We look forward with clear vision to our future!



Eye Center Council Update

Bonnie Dale, a resident of Sun City Lincoln Hills, has joined the Eye Center Council, and we welcome her to the group. Jerry and Helen Suran have resigned, and we extend our thanks to them for their assistance and support.

The UC Davis Eye Center Council is a group of Eye Center supporters who have volunteered to help raise awareness of the activities and accomplishments of the Eye Center and to seek financial support for its programs. UC Davis Eye Center Council Members are:

Mark J. Mannis, Chair

**Bonnie Dale
Barbara Fingerut
Thomas and Phyllis Hammer
Ann Kerr
Jim and Lyn Livingston
Michael Schermer, M.D.
Jim and Mary Jo Streng
Joseph Zeiter, M.D.**

Ernie Phinney, Staff



Mannis Elected President of the Pan-American Association of Ophthalmology

Mark J. Mannis, M.D., Professor of Ophthalmology and Chair of the UC Davis Eye Center, was elected President of the Pan-American Association of Ophthalmology (PAAO) on July 6, 2011, at its biannual Congress in Buenos Aires, Argentina. Long involved with the Association as an active participant in its educational and professional activities and Board officer, Dr. Mannis succeeded Cristián Luco, M.D. (Chile) and will serve a two-year term culminating in the Association's next conference in Rio de Janeiro, Brazil, in 2013.

The Pan-American Association of Ophthalmology is a non-profit organization founded in 1939. The mission of the PAAO is continuing education for ophthalmologists,

prevention of blindness, and promotion of scientific and cultural exchange among ophthalmologists of the Western Hemisphere and beyond. With members in more than 35 countries, the PAAO provides a forum for professionals from all over the world to gather and focus on ways to standardize and advance ophthalmic knowledge and skills for the improvement of patient care.

Dr. Mannis is pictured on the dais with the Association Executive Committee delivering his inauguration speech at the PAAO Congress in Buenos Aires.

Africa and Back

Lawrence S. Morse, M.D., Ph.D.



In June, my wife, Debbie and I traveled with a team representing the Feeding Nations Through Education Foundation to the country of Burkina Faso

in West Africa. Our purpose was to visit the village of Thyou about 2 hours west of Ouagadougou, the capital city. Burkina Faso is one of the 10 poorest countries in the world and has an illiteracy rate of approximately 80%. We were able to raise money to install a new well within the village, build a grain mill powered by a diesel powered motor, establish a new eye glass clinic and generate power for electricity for the first time in the village. On average, these people earn about a \$1 per day, so basic commodities were scarce. We were successful in training 2 nurses and medical staff to dispense reading glasses and rudimentary distance glasses from approximately 2000 pairs of glasses that we provided. This can be ongoing as the supply can be replenished going forward. The community was represented by a mixture of Muslim Mosques and Christian churches, which co-existed without obvious tension. It was difficult to experience the rudimentary care delivered but gratifying to make a difference in the eye care and water supply of these people. The Feeding Nations Through Education Foundation is making strides in educating children of families that accept oxen to help them plow their fields. After 2 years, the families are required to send one of their children to a school from the profits that are achieved through increased productivity. It has made a tremendous difference in the lives of these people.



In August of this year, Debbie and I returned to Africa to the country of Burundi. This is listed as the 4th poorest country in the world and suffered through several genocides in the 1970s and again in the mid 1990s stemming from ethnic difficulties between the Hutu and Tutsi tribes. Over 800,000 people were killed and the tensions continued through the early 2000s. Just like in South Africa where the local churches helped to mediate reconciliation with the past grievances with apartheid, the local churches in Burundi were able to facilitate and begin the reconciliation in Burundi. This was a truly historic trip as we joined the Luis Palau Organization to work with over 500 churches in the region to perform acts of service to the community and begin this reconciliation. My project was to serve the people with reading glasses, which in itself was historic. During the genocide, anyone with glasses was targeted for extermination, as they were considered dangerous. To do an eye glass clinic was a huge process of the reconciliation project and we were able to see 2100 patients during the 5 days that the clinic was open. My wife and I joined with 4 other individuals to see between 400-600 patients per day. These volunteers were trained in how to test reading vision, pick appropriate pairs of glasses, and recheck the vision. Additional screening for medical ophthalmic problems were addressed with dilated exams under rudimentary conditions and referred to local ophthalmologists for follow up.





Ophthalmology Fellows are the Most Advanced Students at UC Davis Eye Center

After eight years of medical education, including three years of resident ophthalmology training, and eligibility for American Board of Ophthalmology certification, some ophthalmologists elect to continue their education with a post-residency fellowship program of one or two years. Medicine is becoming an increasingly specialized career, and these physicians choose to extend their education in order to prepare themselves for the most specialized practices in the field. UC Davis Eye Center is fortunate to have four fellows this year among its most accomplished medical practitioners.

The ophthalmology fellows for 2011-2012 are:

Melissa Tong, Glaucoma Fellow (one year).

Faculty mentors: Drs. James Brandt, Michele Lim, and Annie Baik

Brett Shapiro, Cornea Fellow (one year).

Faculty mentors: Drs. Mark Mannis, Ivan Schwab, and Jennifer Li

Saadia Rashid and Allan Hunter, Retina Fellows (two years—clinical practice and research). Faculty mentors: Drs. Lawrence Morse, Susanna Park, and David Telander

In addition to advanced training, there is an important research component to most fellowship programs. Over the years, several of

our graduate fellows have gone on to assume academic positions in major universities around the country, including here at UC Davis. Two of our current faculty members, Drs. Annie Baik and Jennifer Li, completed their fellowship training here at UCD. Regardless of their career paths, UC Davis fellows leave the Eye Center as experts in their field of medical practice.

Fellowship training adds an important dimension to the graduating ophthalmologist's professional preparation, equipping the physician with the ability to provide highly specialized care. Moreover, the fellow provides an important addition to the layered Eye Center teaching program, providing yet another educational resource for our residents and medical students. With their up-to-the-minute training and their inquiring minds, fellows add a special challenge and sense of accomplishment for our faculty. We are fortunate to have such extraordinary people here at UC Davis.



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UC Davis Eye Center residents volunteer at the 4th annual Sacramento Homeless Connect Event

By Charles Weber, M.D.

On May 21st, 2011, UC Davis Eye Center resident physicians, Drs. Alena Reznik, Jennifer Rizzo, Charles Weber and Danli Xing, volunteered their skills and knowledge to serve patients at the 4th annual Sacramento



Homeless Connect event at Sacramento City College.

Sacramento Homeless Connect, an event organized by Sacramento Steps Forward, is modeled after the national 'Project Homeless Connect', which began in San Francisco. The event is a one-day, one-stop resource fair for homeless individuals, with an emphasis on hospitality and an overarching goal to bring the community together to support the services that help end homelessness.

Our Eye Center residents teamed with the Lions Club Vision Van as well as several outside



volunteers to perform a wide array of services, which ranged from providing reading glasses to performing complete dilated retinal examinations. Any individuals whose exam findings were of concern, were referred for additional evaluation, including some of those patients being further evaluated at the UC Davis Eye Center.

The services provided at the Vision Van were some of the most popular of the event, and some patients waited for several hours to be evaluated by the Eye Center residents.

Simple interventions, like providing reading glasses to middle-aged individuals attempting to re-enter the workforce, can have a huge



impact in overcoming seemingly small obstacles to finding work. Such challenges include searching the small print of the job listings in the newspaper or clearly making out the text of a job application. Furthermore, barriers to disease screening and preventive eye care exist within our health care system, and those barriers are often higher for individuals with limited means. Events, such as the Sacramento Homeless Connect, help to lower those barriers.

Overall, the Eye Center residents found the experience quite rewarding, and we look forward to serving at the Sacramento Homeless Connect 2012.



Medical Students, Their Education and The Eye Center

By Annie K. Baik, M.D.

Each year, upper level medical students at UC Davis participate in the ophthalmology clinical clerkship, one of several clerkships comprising the last 2 years of medical school. Medical students typically spend 2-4 weeks on the ophthalmology clerkship, during which they undergo an intensive academic experience. Many life-threatening medical conditions may manifest in the eyes before symptoms arise elsewhere in the body, and students are often shocked to see that there is so much more to ophthalmology than cataract surgery and prescribing glasses.

We challenge future doctors to absorb and ponder how vision impairment affects multiple aspects of patients' lives, from daily tasks such as paying bills to major issues involving the ability to live independently. These are lessons we hope medical students will remember and apply as they evolve into full-fledged physicians, regardless of the specialty of medicine they ultimately pursue.

The faculty educate future doctors about common eye problems, world-wide leading causes of blindness such as macular degeneration and glaucoma, and when to refer patients to an ophthalmologist. We also aim to inspire students to join our ranks and to enter the field of ophthalmology. While with us, they observe a multitude of surgical procedures, learn to perform basic eye exams, and gain basic mastery of the complex equipment required to perform the ophthalmic exam. We provide a foundation for future physicians entering a diversity of fields including family practice, internal medicine, and pediatrics, as well as ophthalmology.

“In the sick room, ten cents’ worth of human understanding equals ten dollars’ worth of medical science.”

~Martin H. Fischer

At the end of July, I sat in the audience at the White Coat Ceremony for the UC Davis School of Medicine Class of 2015. Each year, medical students across the country participate in the same rite of passage – putting on a white coat, feeling the weight of a stethoscope around their necks for the first time, then reciting a version of the Hippocratic oath. It is a milestone that marks one’s entry into a life of service in the health care profession, and one of the most vivid memories for many physicians, even decades later.

The education of one doctor requires the devotion of a multitude of people: Family and friends to provide support during the dark hours, peers to lend a sympathetic ear, and mentors to shed some light on how to navigate the years to come. Most importantly, there are the hundreds of patients who are the foundation of this education. Without patients, we would only have the textbooks to guide us, and without patients, we would not have had the material to produce the textbooks in the first place.

At UC Davis, we strive to provide well-rounded patient care and to educate true healers. We appreciate the generosity of our patients, who are often the most influential educators of future physicians and who require us to see each person as an individual who is greater than his or her medical condition.

National Eye Institute (NEI) Grant Provides Critical Support for Training New Vision Scientists

The goal of the UC Davis training program in vision science is to produce vision scientists capable of establishing independent research programs that will address significant vision problems and advance our basic knowledge and understanding of vision and the visual system. This effort requires taking an interdisciplinary approach to training as it becomes increasingly clear that the most significant advances in vision research happen as a result of interdisciplinary collaborations. So students are both required and much encouraged to extend their familiarity with areas beyond their core concentrations in science.

Professor John S. Werner, who holds a joint appointment in Ophthalmology and the Neurobiology, Physiology & Behavior Section of the Division of Biological Sciences on the UC Davis Campus, is principal investigator and director of the National Eye Institute-sponsored Training Grant. Dr. Werner's principal laboratory work is located at the Eye Center facilities in the Ellison Building on the UC Davis Medical Center campus, but the training program includes 31 vision scientists across 11 departments at UC Davis.

Students receive National Eye Institute support after they complete their basic science training in a specific discipline and are involved in a focused research project with a faculty mentor. The program supports them for an additional series of courses in basic and clinical vision science, as well as participation in vision science colloquia, journal clubs and Grand Rounds in ophthalmology. This two-pronged emphasis on rigorous basic science training, starting in the first year, and vision science

breadth through courses in subsequent years, is intended to make our graduate students better adapted to the changing technical and intellectual climate to be faced by the next generation of vision scientists.

A unique feature of this program is that ophthalmology clinical faculty members teach one of the vision science core courses. In this way, basic science students become conversant in the multidisciplinary languages, methods and problems in vision science, ranging from molecules to disease. These courses are designed to broaden the research perspective and skills of future vision scientists to have a significant impact on the clinical and basic science agendas of the National Eye Institute.

The UC Davis training program is premised on the view that the next generation of vision scientists must have a firm grounding in the basic sciences of their research area, an understanding of the multidisciplinary approaches to vision science, and meaningful exposure to the clinical vision problems remaining to be solved. UC Davis has made a major commitment to establish the faculty and infrastructure in the vision sciences to achieve these training goals.

The current NEI grant of \$1,250,000 runs through 2013 and is the cornerstone support for vision scientist training at UC Davis.

For more information on National Eye Institute please visit: www.nei.nih.gov

Crocker Art Museum Hosts Spring 2011 Werner Lecture Series



In a first-ever collaboration between the UC Davis Eye Center and the Crocker Art Museum, the Eye Center and the Museum presented a unique lecture series by UC Davis Distinguished Professor of Ophthalmology John S. Werner: *Color Transformations in Impressionism—In the Eye, On the Canvas, and Across the Life Span*.

Dr. Werner's lectures drew on his life-long interest in art, impressionism in particular, and his deep understanding of the physics of light and the effects of light on the human retina and cerebral cortex. Using examples from the art of an array of French and California Impressionist artists, including works from the Crocker collection, Dr. Werner tied aspects of the physics and perception of light to the painting style and personal health of some of the world's most famous painters. Challenging, yet fully accessible, his presentations were attended by over 700 Crocker and Art Museum donors, friends and community members.



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June 13-16, 2012

35th Annual UC Davis Ophthalmology Symposium
Big Topics on the Big Island:
An Update of Comprehensive Ophthalmology
Hilton Waikoloa Village
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