Koret Vision Institute + Beckman Vision Center + Department of Ophthalmology

Summer 2006

University of California San Francisco + That Man May See

### Focal Point



Dear Friends

We devote this issue to the retina and its disorders and proudly introduce our outstanding vitreoretinal team. Expertise, technology, innovation, and collaboration help to make our department a leader in this field, and one of the finest in the country.

Also, we welcome new faculty with enthusiasm and salute recent retirements with affection and gratitude. These individuals devote their careers to advances in vision care through scientific discovery and to inspiring our next generation of vision scientists and clinicians.

Their research investigates promising new drug therapies and delivery systems, providing hope that future generations might be spared from eye diseases that prevail today.

For nearly 35 years, our success has been greatly enhanced by the generous support of our friends through That Man May See.

Your gifts to That Man May See help us remain agile and resourceful in the face of the ever-changing challenges to advancements in medical research. Thank you for your part in our vision.

Sincerely,



Stephen D. McLeod, MD Theresa M. and Wayne M. Caygill, MD Chair in Ophthalmology Professor and Interim Chair, UCSF Ophthalmology



## Ophthalmology Insight The Amazing Retina

A tiny patch at the back of the eye, the size and thickness of a postage stamp – the amazing retina has millions of specialized cells that capture visual information and translate it to the brain, so that we "see" visually rich moving images, with color, depth, and subtleties of shading.

Like the workings of a sophisticated video camera, light reflected from objects is focused by the eye's cornea and lens onto the light-sensitive retina. Millions of tiny nerve cells and chemical interactions in the retina are involved in a complex sequence that transforms the reflections into signals to the brain's visual cortex, so that we can "see" the images before us. (See How the Retina Works, page 8.)

Where Visual Perception Begins Without a functioning retina, the eye cannot communicate with the brain, and vision is impossible. The retina is where the first phase of visual perception occurs.

Because the retina plays such an important role in processing images before they can be "seen," a damaged retina can cause dire vision problems, including blindness.

Investigators at UCSF Ophthalmology are internationally recognized for studies of the retina, and discoveries that maintain sight. This is one of the first and finest retinal services in the U.S., where clinicians and research scientists collaborate to rapidly translate laboratory findings into treatment – with new drugs, new technologies, and new surgical techniques. *(See* Retina Research Profiles, *page 8.)* 

Continued on page 2

*Envision the Future* Patient-Centered Innovation

Renowned Retinal Surgeon Eugene de Juan, Jr., MD, Joins the Retina Faculty

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#### y goal is to effect as much good as I possibly can as a doctor," says the newest member of the retina faculty, Eugene de Juan, Jr., MD. "So I care for retina patients, and figure out practical, implementable ways

to significantly improve patient care and quality of life for patients worldwide."

An internationally renowned retinal surgeon and inventor, and

Research Profile

Collaborations

Achieve Results

president of the American Society of Retinal Specialists, Dr. de Juan has been named Jean Kelly Stock Distinguished Professor of Ophthalmology at UCSF. He will focus on translation of new

Continued on page 2



Envision the Future: Dr. Eugene de Juan at UCSF



The Patient's Point of View: Jim Graziani



A PEEK INSIDE:





### Patient-Centered Innovation

ophthalmic ideas to patient care, as well as teaching, research, and caring for retina patients.

Dr. de Juan has made prodigious contributions to his areas of major research interest, including severe vitreoretinal disease, retinitis pigmentosa (RP), macular degeneration, and vitreoretinal surgical instrument development. He has developed over 100 ophthalmic products, holds more than 40 issued patents, and has published over 200 scholarly, peer-reviewed articles.

"There is a wonderful, productive scientific environment at UCSF, and we are dedicated to the development of new therapies," Dr. de Juan says, explaining why he joined this retina faculty, following a distinguished career at three major universities: Duke, Johns Hopkins, and the University of Southern California (USC) Doheny Eye Institute.

"UCSF is internationally recognized for important strides in basic knowledge of the retina and diseases of the retina," Dr. de Juan says. For example, pioneering investigations by Professor of Ophthalmology and Anatomy Matthew LaVail, PhD, and the late Professor of Ophthalmology and Physiology Roy Steinberg, MD, PhD, first showed that growth factors could protect photoreceptors from injury or retinal degeneration. "These discoveries opened the door to pharmacologic treatment of retinal degenerative disease."

#### **Revolutionary New Products**

"Socially responsible universities like UCSF develop the scientific basis for potentially good therapies so that

companies will take the risk to push new therapies forward," says Dr. de Juan, explaining his role in initiating commercial development of new ophthalmic products.

For the past 15 years, Dr. de Juan has been director of the innovative MADLAB (Microsurgery Advanced Design Lab), where bioengineers have collaborated with vision researchers to develop over 100 vitreoretinal instruments and devices. MADLAB has now moved to UCSF, where it operates in conjunction with VA laboratories to improve surgical instrumentation.

"My goal is to effect as much good as I possibly can as a doctor." – Dr. Eugene de Juan, Jr.

### The Amazing Retina

Fighting Retinal Disease and Injury There has been a nearly epidemic increase in retinal degeneration and blindness from diseases that affect the retina in our aging population – macular degeneration, diabetic retinopathy, and retinitis pigmentosa. Retinal problems like the aggressive and often lifethreatening retinoblastoma tumor affect the very young.

Our scientists are widely recognized for groundbreaking clinical and molecular studies of the retina: New technologies for treatment. Daniel Schwartz, MD, director of the retinal service at UCSF and the Veterans Administration, has worked closely with scientists at California Institute of Technology (Caltech) for over 10 years to develop new technologies for treating eye disease. Their first invention, a laser-adjustable lens for use in cataract and refractive surgery, is in clinical trials and will be available in the European Union this year. Dr. Schwartz has authored approximately 30 patents. Promising new drug therapies Researchers Jacque Duncan, MD, Eugene de Juan, Jr., MD, Robert Bhisitkul, MD, PhD, and Jay Stewart, MD, are assessing promising medications targeting macular degeneration, and investigating methods to release medications directly into the eye. Joan O'Brien, MD, is known internationally for investigating new therapies for ocular tumors, including the childhood retinoblastoma. (See profile of Dr. Bhisitkul, page 5.) Groundbreaking basic research. Basic retina research opens the doors to novel therapeutic possibilities. David Copenhagen, PhD, studies the communication of neurons in retinal disease; Julie Schnapf, PhD, explores the basis of visual perception of colors and shapes; and David Krizaj, PhD, examines the cellular mechanisms that make vision possible.

New AMD treatments. Dr. Schwartz and his collaborators at Caltech have active research programs for treatment of early macular degeneration, degenerative myopia, and a safer alternative to LASIK vision correction surgery.

Advances in groundbreaking "growth factor" research by investigators Matthew LaVail, PhD, Dr. Duncan, and Dr. Bhisitkul could improve treatment for wet AMD, and may yield a treatment for dry AMD. (See Discovering New Ways to Treat Macular Degeneration, page 11.)

Another approach to AMD treatment by Dr. Schwartz and Department of Medicine

Credit: Ann H. Milam, PhD, and Sinoj K. John, The Human Retina in Health and Disease, University of Pennsylvania



"Incubator companies outside the university can begin developing commercially viable products with venture capital support, so that inventions may be offered to companies for commercial development," Dr. de Juan says.

Dr. de Juan also co-founded ForSight Labs (www.forsightlabs.com), seeking to create new companies around promising ophthalmic device technologies, in collaboration with the new company incubator, The Foundry, in Menlo Park.

Artificial Retina Could Bring Sight To Millions Dr. de Juan's tremendous success in ophthalmic innovation begins with research at the university.

Within this decade, many blind persons might "see" again, thanks to a unique artificial retina that Dr. de Juan has developed in collaboration with biomedical and engineering researchers from USC Doheny Eye Institute, North Carolina State University, and UC Santa Cruz. They created a retina chipset, using state-of-the-art microelectronics, with a camera mounted on the patient's glasses and a chip in the patient's eye. Initial studies, with 17 blind patients who have "seen" image patterns, were the first to demonstrate that patterns of electric pulses into a blind eye could produce a visual response.

The artificial retina is now under development at Second Sight Medical Products, Inc., in Los Angeles.

"If this artificial retina can make the blind see, it will be the culmination of a 20-year effort," says Dr. de Juan. "This could not have happened without the work at the University, without the commercial resources, without the dedication and cooperation of the patients, and without the generous donors who gave funds to get it going." Family Tradition of Ophthalmology

A native of Alabama, Dr. de Juan was introduced to ophthalmology by his late father, Eugene de Juan, Sr., MD, who practiced in Mobile, Alabama.

Dr. de Juan received his medical degree at the University of South Alabama College of Medicine in 1979, and was the first recipient of the school's Distinguished Alumnus Award. He was a resident at the Wilmer Eye Institute, Johns Hopkins University, and a fellow in vitreoretinal surgery at Duke University, before joining the Duke faculty with an appointment in ophthalmology and cell biology.

Prior to joining the UCSF retina faculty, Dr. de Juan was Joseph E. Green Professor of Ophthalmology Inaugural Chair at the Wilmer Eye Institute, and was subsequently USC professor and CEO of the USC Doheny Retina Institute.

He and his wife of 30 years, Elizabeth, moved to San Francisco from Los Angeles this spring. They have four children: one in college in Tennessee, two in business in Tennessee, and one a business consultant in Mexico City. They are avid sailors, and when Dr. de Juan is not in the laboratory or seeing patients, the couple might be found in a sailboat on San Francisco Bay.

"This work is my life, my vocation, my happiness," Dr. de Juan says. "If we can successfully develop innovative ophthalmic solutions, working with innovators in other fields of science, we will be able to share new approaches with our colleagues, residents, and students. Together, we will imagine, develop, and provide better therapy for our patients."

#### Collaborations at UCSF and Beyond

"Research at UCSF gives investigators the freedom to explore exciting new therapeutic approaches, with tremendous talent and focus, as well as ethical oversight," says Dr. Eugene de Juan, Jr. "I'm pleased to be working with the retina department led by Associate Professor Daniel Schwartz, MD, who is recognized nationally as a leader in translational activities in the university, bringing new approaches to research and to patients, and doing that ethically and effectively."

Dr. de Juan joins a team of innovative retina researchers at UCSF who are reaching out across university lines – to cardiologists, bioengineers, and beyond, in Berkeley, UCLA, Caltech, and across the world – to enhance their understanding and explore potential therapeutic avenues in ophthalmology.

At UCSF, Dr. de Juan is initially focusing on two areas of retina research:

Local Administration of Drug Therapies. This would solve a major problem in ophthalmology by delivering drugs exactly where they are needed, with fewer side effects. Direct administration of drugs to the eye, which is 1/1000 of the body weight, would reduce the high dosages of oral medications now required to treat the retina. Jay Stewart, MD, who collaborated with Dr. de Juan at USC, will also be working on this project.

New Surgical Techniques and Instrumentation. Making surgical techniques less invasive, with instruments that are more efficient, means recovery will be faster and surgery will be less expensive. Robert Bhisitkul, MD, PhD, is collaborating with Dr. de Juan on bringing new technologies to surgical instrumentation (see profile of Dr. Bhisitkul on page 5).



investigators John P. Kane, MD, PhD, and John D. Baxter, MD, at the Cardiovascular Research Institute, shows that medications comparable to cholesterol drugs may prevent the harmful effects of subretinal blood vessel growth in wet macular degeneration.

#### Diagnostics and Patient Care The most complex, challenging patients come to UCSF when they need retinal care, referred by ophthalmologists from the San Francisco Bay Area, throughout California, and from around the world.

Our team of renowned retina clinicians – Daniel Schwartz, MD, Eugene de Juan, Jr., MD, Robert Bhisitkul, MD, PhD, Joan O'Brien, MD, Jacque Duncan, MD, Jay Stewart, MD, and Alexander Irvine, MD – covers all aspects of retina diagnostics and care.

Sophisticated Diagnostics Our clinicians use an array of leading-edge diagnostic tests to assess vision loss in patients with all stages of retinal injury and degeneration, and to identify patients who could benefit from new therapies before irreversible vision loss occurs.

Dr. Duncan leads a team that uses the most advanced diagnostic tools, including a new technique that analyzes local retinal function (multifocal electroretinography). They are also developing more accurate methods to measure the impact of experimental therapies, as new treatments are developed for injuries to the retina and for AMD and other retinal degenerations.

Teaching the Next Generation Our retina specialists teach skills and medical approaches to our residents - five exceptional young physicians selected each year from a pool of 350 applicants for a three-year program of specialty training in ophthalmology. These new residents are the future leaders in the field, selected for their academic aptitude and their strong backgrounds in basic and clinical ophthalmology. This is a highly sought-after residency placement, because UCSF Ophthalmology is so widely

recognized for academic and clinical excellence.

Ophthalmologists from all over the U.S. and around the world also come to UCSF for additional training – as vitreoretinal fellows, and as participants in Grand Rounds for practicing physicians – to learn about the most sophisticated diagnostic and patient care techniques from the retina specialists who have developed those approaches to eye care. ●



# Patient's

### Jim Graziani's Gratitude

**C** raziani in Italian is a way of saying "thanks." For Jim Graziani of Napa, California, gratitude pours off the tongue for UCSF's Professor Robert B. Bhisitkul, MD, PhD. Jim is being treated at UCSF Ophthalmology with a relatively new procedure to combat macular degeneration.

"It all started when I was pounding a nail, and the nail looked bent," said Jim, in describing the onset of macular degeneration. "Then I tried to hit a golf ball, and the ball looked like a half moon. My golf shoes looked pointed," he continued.

These early signs were an indication of age-related macular degeneration (AMD), the leading cause of blindness in Americans 60 years and older. The disease can appear suddenly for otherwise healthy people, who then lose the ability to read and drive, and are at risk for early loss of an independent life.

Napa's John Bosetti, MD (UCSF School of Medicine '87 and ophthalmology resident '91) was treating Jim and suggested he make the trip to San Francisco for an appointment with Dr. Bhisitkul.

New AMD Treatment with Macugen "Dr. Bhisitkul knows the latest research in his field," says Jim. "He told me about a new treatment with a drug called Macugen." The drug is approved for all forms of wet AMD, and it is produced D S R C K Z E

OF VIEW

Jim Graziani, UCSF Ophthalmology patient, with Dr. Robert Bhisitkul.

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and marketed by (OSI) Eyetech and Pfizer Inc.

The wet form of macular degeneration is caused by the abnormal growth of fragile blood vessels under the retina that leak blood and cause damage to the lightsensitive photoreceptor cells. Macugen works by blocking vascular endothelial growth factor (VEGF), a protein that promotes blood vessel growth. It has the potential for helping all patients with the wet form of the disease, whereas the currently approved treatment, photodynamic therapy (PDT), is approved only for patients that have a subtype of wet macular degeneration. Dr. Bhisitkul is on the advisory board of Genentech, Inc., and he is currently participating in three Genentech clinical trials involving, among others, a new drug recently approved by the FDA, Lucentis, also for the treatment of AMD. Lucentis shows great promise in halting vision loss and improving vision for a significant number of patients with wet AMD. (See profile of Dr. Bhisitkul on page 5.)

Jim Graziani and his wife Julie traveled together to a recent appointment with Dr. Bhisitkul. Julie has been Jim's willing chauffeur for lots of errands and appointments throughout the experience of Jim's vision loss. But Julie celebrated when Jim started driving again and said, "For the first time in a long time, Jim could finally drive to buy himself a chocolate bar and not have me know about it."

Jim and Julie are new members of the Chairman's Forum, the support group at That Man May See, providing unrestricted support to be used for research to prevent vision loss for current and future generations. That Man May See joins Jim and Julie in their gratitude – Grazie.

### Nerve Repair with Nanotechnology Colleagues Praise Dr. David Sretavan's Approach

surgery, published in Neurosurgery, October 2005.

**C**alling the work on a multidisciplinary strategy to manipulate single axons (nerve cells) using micro/nanotechnology "an innovative new nerve repair paradigm," scientific colleagues praise the research by Professor David Sretavan, MD, PhD, on microscale axon

Researchers who extolled Dr. Sretavan's work include the chairman of the Cleveland Clinic Spine Institute, neurosurgeon Edward C. Benzel, MD, who called it "a wonderful glimpse into the future of 'high-tech' neurosurgery," and said that "the strategies and methodologies [the authors] outline should lead us to believe that some day they (or those who they intrigue) will actually 'pull it off.'" Other commendations came from neurologist Stephen M. Russell, MD, director of the Stereotactic Laboratory, and Patrick J. Kelly, MD, director of the Department of Neurosurgery at NYU.





### Finding Multiple Approaches to Improving Vision

Dr. Robert Bhisitkul

he most exciting part of research is shifting our goals towards using multiple approaches to improve vision in major retinal diseases like agerelated macular degeneration (AMD) and diabetic retinopathy." says retina researcher, Associate Professor Robert Bhisitkul, MD, PhD. Trained as a neuroscientist and ophthalmologist, Dr. Bhisitkul's work incorporates research, surgery, teaching, and patient care. He is also Web site editor for the British Journal of Ophthalmology.

Dr. Bhisitkul has been actively involved in developing and assessing new therapies for retinal disease He directs clinical trials at UCSF as part of national studies, including an investigation showing that the drug Lucentis (ranibizumab) could maintain or improve vision for patients with AMD. Lucentis, along with Macugen, are in a new class of "anti-VEGF" (vascular endothelial growth factor) medications to treat AMD. Ongoing Phase III studies of Lucentis at UCSF will evaluate its long-term effects next. Another new study at UCSF will evaluate extended use of the drug Macugen, now prescribed to treat AMD patients, for patients with diabetic macular edema

#### Major Improvements in AMD Therapy

"We have seen major breakthroughs in therapies for AMD, which is the leading cause of vision loss and blindness in Americans over 65," Dr. Bhisitkul reports. "Five years ago, we had no treatment for AMD beyond laser surgery to cauterize bleeding vessels beneath the macula (the center of the retina where detailed vision occurs).

"We are now successfully stabilizing vision in the majority of patients with wet AMD," he says. "In the future, we will begin combining those therapies to get synergistic improvement in the outcomes." Today there are five viable treatment options for wet macular degeneration -Visudyne<sup>™</sup> drug treatment with photodynamic therapy (PDT), Macugen, Lucentis, Avastin, and intra-vitreal steroids - and many other drugs in development that will become available in the next two to five years.

For patients with dry macular degeneration, an extensive National Eye Institute (NEI) Age-Related Eye Disease Study (AREDS) showed that highpotency antioxidant vitamins (Ocuvite PreserVision antioxidant zinc tablets) could protect the macula from AMD damage.

#### New Approaches to

Macular Degeneration Dr. Bhisitkul is currently involved in two laboratory projects that could impact treatment for macular degeneration – a study of subretinal hemorrhage, and a study in collaboration with Drs. Duncan and LaVail to enhance PDT (photodynamic therapy).

"Our study of subretinal hemorrhage could lead to treatment that would halt or reverse damage to photoreceptor cells in AMD," Dr. Bhisitkul says.



Dr. Robert Bhisitkul with research associate Joshua Wong, actively involved in developing and assessing new therapies for retinal disease.

Preliminary research, presented at the ARVO (Association for Research in Vision and Ophthalmology) conference in May 2006, showed that the blood itself is toxic to the retina, and causes photoreceptor cells to die within 24-48 hours. The hypothesis is that the toxicity is due to iron molecules released in the hemorrhage.

"We have shown that neurotrophic growth factors (NTF) can reduce retinal cell death from PDT (a lightactivated laser treatment) with Visudyne™ for AMD," Dr. Bhisitkul reports. This research collaboration with Jacque L. Duncan, MD, and Matthew M. LaVail, PhD, was published in 2004 in *Investigative Ophthalmology and Visual Sciences*.

Working with surgical pioneer Eugene de Juan, Jr., MD *(see story on page 1)*, Dr. Bhisitkul is bringing new technologies to surgical instrumentation. Their development of siliconbased instruments (MEMS) manufactured with computerchip technology produced forceps for retinal surgery that can be 10 to 100 times smaller than standard instruments. The experimental technology was reported in the *British Journal* of *Ophthalmology* this year, and Drs. Bhisitkul and de Juan are working on other novel approaches to intraocular surgery.

Combining Significant Research with Excellent Patient Care "I have always seen treating retinal disease as a form of applied neuroscience," says Dr. Bhisitkul, who received a PhD at the Yale Graduate Program in Neurosciences. He was an undergraduate at Stanford University and attended medical school there.

Following a residency and fellowship at Harvard's Massachusetts Eye and Ear Infirmary, Dr. Bhisitkul joined the faculty at UCSF in 1998. "I welcomed the chance to work with Retina Director Daniel M. Schwartz, MD, and the esteemed retina pioneer Alexander R. Irvine, MD. I saw this as the best chance to combine significant research with excellent patient care." Dr. Bhisitkul lives in San Francisco with his wife Sara MacPherson and three small children, Iam, Lucille, and Jonah. Sara, who has a background in refugee and immigration law, has turned to a career in documentary filmmaking. They are Francophiles whose children all attend the Lycée Français La Pérouse.

"I knew I wanted to be a physician since I was a child," Dr. Bhisitkul says. "I chose ophthalmology late in my medical school education, after seeing microsurgery, because of the elegance and efficacy of the field. My motivation is examining new therapies and new technologies to see how they can best be useful to patients."

## Perspective on Retina Care From Anatomy to Molecular Studies Dr. Alexander Irvine on 40 Years of Retina Care

doday, we are trying to understand the molecular and genetic basis of the retina, and we are starting to see a synergy between the clinical physician who knows what the eye problem is, and basic scientists who attack it on a molecular level," says Professor Emeritus Alexander Irvine, MD.

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"But in 1965, when I first became a resident at UCSF, the emphasis was on understanding the anatomy of the eye and eye disease, using the light microscope and then the electron microscope," he recalls. "Starting in the 1950s, our department chair, Michael Hogan, MD, became interested in using the electron microscope to study the ultrastructure of the eye, and incorporated his research findings in the classic textbook, Histology of the Human Eye."

After his residency at UCSF, Dr. Irvine went on to complete fellowships in cornea at the University of Florida, and in retina at University of Miami.

Bascom Palmer Eye Institute. He became assistant chief of ophthalmology at San Francisco's Letterman Army Medical Center in 1970, and joined the UCSF Ophthalmology faculty in 1972, where he became professor and department vice chair. He was named professor emeritus in 1998.

Time of Major Change in Retina Renowned for his expertise in clinical retina studies, teaching, and patient care, Dr. Irvine considers himself fortunate that his career began at the time of major change in retina care.

"When I began my residency, the vitreous (the fluid that fills the space between the lens and the retina) was considered 'forbidden territory," says Dr. Irvine. "Because the vitreous fluid got caught in wounds, a surgeon's skill was judged largely on his ability to avoid it altogether, which greatly limited surgical options for repairing retinal damage.

"We used to do surgery for giant retinal tears with the patient tied face-down in a rolling bed called a Stryker frame, and the physician lying on the operating room floor. A gas bubble was injected into the eye, and the patient in the Stryker frame was rolled back and forth to manipulate the retina," Dr Irvine recalls

### 1970: Vitrectomy is Born

Dr. Irvine was fortunate to be a retinal fellow in Miami when Robert Machemer, MD, developed a new surgery vitrectomy - that is now the standard treatment for many types of retinal damage including diabetic vitreous hemorrhage, macular holes, giant retinal tears, and certain retinal detachments.

Vitrectomy made modern microscopic retinal surgery possible, by removing the vitreous fluid from the eye and replacing it with gas or heavy liquid to hold the retina in place, and allowing the use of instruments on the retinal surface.

Dr. Irvine was first in Northern California to perform this innovative surgery in 1970, when the first commercial instruments were made available to a few of Dr. Machemer's students. The UCSF clinical faculty - Ariah Schwartz, MD, Larry Lonn, MD, and the late George Hilton, MD - evaluated patients with Dr. Irvine, and when all agreed there was no alternative treatment, Dr. Irvine did the new surgery.

Vitrectomy instrumentation was greatly improved when Connor O'Malley, MD, another UCSF clinical faculty member, developed a vitrectomy system that allowed much smaller instruments.

By 1975, vitrectomy surgery was further improved when Steve Charles, MD (now on the faculty at Columbia College of Physicians and Surgeons and at University of Tennessee) introduced endodrainage, a simple but revolutionary technique that removes retinal fluid through a small incision and flattens the retina with simultaneous air injection, allowing the retina to be reattached from within the eye.

In another advance, Stanley Chang, MD (now Edward S. Harkness Professor and Chairman of Ophthalmology, Columbia University) showed that heavy, transparent liquids could be used to manipulate a giant retinal tear, until it could be secured with laser.

"The last three decades have seen an exciting revolution in retinal surgery," Dr. Irvine says. "This work paves the way for future advances, such as the implantation of microchips or drug delivery depots under the retina, and possible transplantation of retinal tissues "

#### The Retina in Fine Detail

"In the late 1960s, fluorescein angiography (examining the circulation of the retina) was developed and opened a whole new understanding of retinal disease," Dr. Irvine says.

"Then, within the last two years, retina diagnosis was dramatically changed again, with optical coherence tomography (OCT), an imaging technique that produces high-resolution cross-sectional views that allow clinicians to see the retina in fine detail. A new electrophysiologic test, multifocal electroretinography (ERG), allows us to assess retinal macular function, to determine whether a vision problem is caused by changes in the retina or elsewhere.

"New drug therapies can now target specific molecules, as the molecular basis of disease is discovered," Dr. Irvine reports. "In macular degenerations where abnormal blood growth occurs, drugs can block the offending molecules. This field is just beginning to erupt."

#### Teaching the Next Generation

Dr. Irvine continues to play an active role in resident training, as he has for over three decades, and he is a beloved member of the retina faculty.

He co-directs the weekly teaching conference at UCSF Ophthalmology, known as the Fluorescein Conference, where retinal photographs of patients are shown, and diagnosis and treatment are discussed. His students and colleagues praise Dr. Irvine's dedication and thoughtful guidance in delivering the best care for patients with eye problems.

## Helping Residents Excel

A Focus on Resident Education

A resident has a short period of time to learn a vast amount of material and skills," says Clinical Instructor Marsha Kavanagh, MD, who was appointed this year to maintain a crucial focus on resident education

Working with Doug Fredrick, MD, who is the residency director, her role has been to work closely with residents, particularly the first-year students: to guide them in their work at UCSF, San Francisco General Hospital, and the Veterans Administration; to help them in the clinic and in the operating room; and supervise them at the inpatient consult service.

#### Guiding Residents

Drs. Kavanagh and Fredrick piloted this new position, which is somewhat similar to that of a chief resident in other programs

who guides and mentors residents. As part of her job, she and Dr. Fredrick developed a new curriculum to organize the material that all first-year residents should have read in the field, based upon the American Academy of Ophthalmology Basic and Clinical Science Course. She took on the new role shortly after graduating from UCSF as a resident in 2005.

"Dr. Kavanagh begins a two-year fellowship in oculoplastic surgery in Columbus, Ohio, this fall," says Dr. Fredrick. "The department conducted a nationwide search to find a replacement who possesses her prodigious skills as an educator, clinician, and researcher."

This fall, Cynthia Chiu, MD, will join the faculty in this important role. Formerly assistant professor of ophthalmology at Cornell Medical Center, New York-



Dr. Marsha Kavanagh

Presbyterian Hospital in New York City, Dr. Chiu completed her residency in ophthalmology at the Massachusetts Eye and Ear Infirmary, Harvard University, in 2004

Connecting Residents and Faculty "I believe that this position has enabled a better connection between residents and faculty," says Dr. Kavanagh. "Being straight out of residency at UCSF, it has been helpful for the residents to have me around this year, as I am so close to their experience."

"Dr. Kavanagh has been the single most influential physician thus far in my training at UCSF," says resident Julie Chen, MD. "She teaches the residents and makes us feel welcome at UCSF. Of her own initiative. she developed a first-year curriculum and gave weekly teaching sessions to improve our level of knowledge. She is patient, encouraging, and an incredible teacher and mentor."

In recognition of her teaching, Dr. Kavanagh was awarded the UCSF Kimura Award for Excellence in Teaching and was nominated for the UCSF Kaiser Teaching Award, both in 2006.

#### R C H E S E Α



### Supporting Collaborative Vision Research

Achieves Results – Faster

Frannie Fleishhacker and the Lincy Foundation want to make a difference - quickly by funding collaborative vision research projects with the promise of achieving near-term results. Both philanthropists recently provided major gifts to support faculty at UCSF who are attracting the best academic and business partners to move their ideas along at a rapid pace.

These two significant gifts, totaling over \$750,000, helped That Man May See achieve over \$1 million for collaborative teams bent on fast-tracking research efforts to find answers more quickly than possible by more traditional research methods. A group of Silicon Valley investors from the board of That Man May See is working to raise even greater funds - so the work can progress speedily to halt vision loss.

"My mother suffered from vision loss." savs Mrs. Fleishhacker. "Mother loved books, and it was devastating when she lost her ability to read. I'd like to see medical improvements and provide hope for others in my lifetime. Now is the time to do this." continues Mrs. Fleishhacker. who serves on the board of That Man May See and spent the past year overseeing the strategic planning process of the foundation.

**Revolutionary New Solutions** UCSF Ophthalmology has developed a business model that works. Five teams of researchers are currently tackling new solutions for the most prevalent eye diseases - macular degeneration and glaucoma - and developing new therapies and procedures that can revolutionize surgery for future generations.

With advances in technology, teams of specialists - in medicine, engineering, and chemistry, for example - can apply knowledge and skills from a variety of perspectives to finding new solutions to vision problems.

Collaborative Vision Research at UCSF includes innovative partnerships within and beyond the University. The UCSF teams are ideally suited to lead these collaborative efforts, based on track record, location, and successful development of the interdisciplinary model.

Unique Collaborations In each of the five projects, the lead Collaborative Vision Research investigator is a UCSF ophthalmologist, while the collaborators may be at other universities or in other departments at UCSF. The following is a sample of

At Byers Hall (the UCSF QB3 building) for a meeting on collaborative research at UCSF Ophthalmology. From left to right, TMMS board member Stephen Smith, Dr. Kimberly Cockerham TMMS board members John Hall and Jack Busch, QB3's Associate Director, Dr. Doug Crawford, and Dr. Gene de Juan.

translational projects under way, each funded through contributors to That Man May See

- Daniel Schwartz, MD: Groundbreaking macular degeneration research with UCSF scientists and engineers and chemists at Caltech, working toward the development of a novel therapy to diagnose and treat macular degeneration early in the course of the disease, before visual loss has occurred. This research team includes Nobel Prize winner Robert Grubbs, PhD.
- David Sretavan, MD, PhD: Surgery will be possible at the level of axons (single nerve cells), with the potential to repair nerves damaged by trauma or disease. Opening new doors in microscale surgical techniques can make a real difference in the future of medicine. A multidisciplinary team of engineers, microtechnologists, and eye researchers is developing minimally invasive tools to produce an innovative treatment for glaucoma.
- Kim Cockerham, MD, FACS: Chip technology to simulate nerve *function*, allowing a symmetric, natural blink for those suffering from permanent seventh-nerve dysfunction following brain surgery. This research can lead to solutions for other neural problems including sleep apnea

and vocal cord paralysis, and can prolong lives for patients with ALS (Lou Gehrig's disease).

- Stephen McLeod, MD: Development of implanted accommodating devices for the treatment of presbyopia (agerelated difficulty in seeing objects close-up), as well as the development of materials to improve the performance of artificial corneas. The accommodating intraocular lens has moved cataract surgery to the next level, allowing the focal ability to both read a book and see at a distance.
- Eugene de Juan, Jr., MD: Prodigious contributions to major research areas including severe vitreoretinal disease, retinitis pigmentosa, macular degeneration, and vitreoretinal surgical instrument development. Dr. de Juan has published over 200 peerreviewed scholarly journal articles and amassed more than 40 issued patents. (See story on page 1.)

#### Significant Gifts for

Collaborative Vision Research In addition to significant gifts from Frannie Fleishhacker and the Lincy Foundation, support this year for the Collaborative Vision Research efforts at UCSF Ophthalmology have been funded by the Chartrand Foundation, the John and Lisa Pritzker Family Fund, Mr. and Mrs. Charles D. Miller, the Hellman Family Philanthropic Fund, and Eugene de Juan, Jr., MD.



Kansas City, received her BA from the University of Pennsylvania, and graduated from Harvard Medical School before coming to UCSF as a resident in 2002. She and her husband, Brian Kavanagh, formerly a scientist at the UCSF Cancer Research Laboratory, now live in Columbus, Ohio,

much of their free time running and exploring the outdoors.

VISIONS Summer 2006

### How the **Retina Works**

Capturing Images Transmitting Images to the Brain

- 1. Photoreceptor cells (rods and cones) convert light energy into electrical signals.
- 2. Neurons in the inner nuclear layer receive electrical signals from the photoreceptor cells.
- 3. Retinal ganglion cells transform the electrical signals from an analog code to a digital code.
- 4. **Optic nerve** transmits the electrical code of the visual image to the thalamus and cerebral cortex of the brain so you can "see" the image.

### **Retina Facts**

The human retina has a surface area of about 10 square centimeters, or 1.5 square inches.

The thickness of the retina is about 300 micrometers, or 1/85th of an inch

The macula, the center of the retina where fine vision occurs, is about 0.3 centimeters in diameter.

Number of retinal photoreceptors:

- 5-6 million cones (used in daylight for color vision and fine detail).
- 120-140 million rods (used for night vision).

Number of fibers in the optic nerve - about 1 million.

Number of retinal ganglion cells (optic nerve cells) about 1 million.

The retina is normally transparent - however, the back of the eye looks reddish-orange, due to the pigment in the cells beneath the retina, the retinal pigment epithelial (RPE) cells, and the underlying blood supply from the choroidal blood vessels. If your ophthalmologist sees any changes in the color or appearance of the retina, that may indicate a disease.

The retina can detect more than 7 million subtle differences of hue

Retinal diseases are a leading cause of blindness in the U.S.

One in three adults over 75 will suffer from age-related macular degeneration (AMD).

AMD is the leading cause of irreversible blindness in the U.S.

Each year 1.2 million of the estimated 12 million people with macular degeneration will suffer severe central vision loss.

### **Retina Research Profiles**

#### 1 PHOTORECEPTORS/RPE



Eugene de Juan, Jr., MD Jean Kelly Stock Distinguished Professor; President, American Society of Retinal Specialists

Research emphasis: Pharmacologic approaches to treatment of retinal degenerative diseases; novel surgical techniques and vitreoretinal surgical instrument development; implant device to restore sight. Published over 200 scholarly, peer-reviewed journal articles, and amassed more than 40 issued patents.

Clinical emphasis: Management of severe vitreoretinal disease, retinitis pigmentosa, and macular degeneration; microsurgery, retinal transplantation, retinal implants, and other new procedures.



#### Daniel Schwartz, MD

Associate Professor; Director, Retinal Service; Director, Veterans Administration Retinal Service

Research emphasis: The collaborative development of diagnostic tools to identify early evidence of macular degeneration. and novel therapies for early intervention in both atrophic and neovascular disease.

Clinical emphasis: Management of complex retinal detachment and vitreoretinal pathology, and age-related macular degeneration.



#### Robert Bhisitkul, MD, PhD Associate Professor

Research emphasis: Laboratory development of novel therapy for macular degeneration based on specific

molecular targets such as VEGF and HIF; development of MEMS-based vitreoretinal surgical devices; and age-related macular degeneration therapeutic clinical trials.

Clinical emphasis: Surgical management of vitreoretinal pathology including agerelated macular degeneration, diabetic retinopathy, complex retinal detachment, and macular pucker.

#### Joan O'Brien, MD



Research emphasis: Study of the molecular genetics of retinoblastoma with the goals of improving diagnosis and providing individualized treatments for this childhood eye cancer.

Clinical emphasis: Adult and pediatric ocular tumors with emphasis on adult ocular melanoma and childhood retinoblastoma.



Research emphasis: Characterization of retinal

degenerations using novel imaging techniques; preclinical evaluation of retinal function in response to gene and pharmaceutical therapies for inherited retinal degenerations; and longitudinal study of the ocular complications of AIDS.

Clinical emphasis: Diagnosis, electrophysiologic evaluation, and management of patients with retinal degenerative disease, including age-related macular degeneration, retinitis pigmentosa, cone rod dystrophy, and Stargardt macular dystrophy.

### Matthew LaVail, PhD

Professor of Ophthalmology and Anatomy; Director, Kearn Family Center for the Study of Retinal Degeneration

Research emphasis: Internationally recognized for groundbreaking research showing that growth factors can slow photoreceptor degeneration. Leader in the fields of neurotrophic factor therapy and gene therapy for retinal degenerations.





Professor of Ophthalmology and Physiology

Research emphasis: Classic studies of the first steps in human vision; discovering how signals combine to create electrical code for the color, shape, and brightness of objects.

### Jay Stewart, MD



Assistant Professor; Director, Vitreoretinal Service, San Francisco General Hospital; Director, UCSF Vitreoretinal Fellowship Program

Research emphasis: Therapies for degenerative myopia, and novel drug delivery solutions, including subretinal drug delivery and slow release of drugs in the eye for vitreoretinal disease.

Clinical emphasis: Surgical management of vitreoretinal pathology, including diabetic retinopathy, vitreomacular interface

abnormalities, proliferative vitreoretinopathy, and complex retinal detachment.



Alexander Irvine, MD Professor Emeritus

Research emphasis: Examining the cause of cataracts,

particularly following eye surgery; investigating the impact of sickle cell trait on the development of diabetic retinopathy.

Clinical emphasis: An internationally recognized clinician, he has trained a generation of outstanding ophthalmologists, and remains a wonderful resource for patients and faculty.

#### **2** GANGLION CELLS



David Sretavan, MD, PhD Professor of Ophthalmology and Physiology

Research emphasis: The molecular basis of optic nerve development and restoration of neural connections after visual system injury; the intersection of biology and nanotechnology to develop new tools for cellular microsurgery, at the level of the single cell.



Hilary Beggs, PhD Assistant Professor of Ophthalmology and Physiology

Research emphasis: Understanding how defects in cellular signaling pathways contribute to eye disease. Specifically, studying how changes in the activity of kinases leads to retinal dysplasia/degeneration, microphthalmia, and errors in neuronal connectivity.



#### Erik Ullian, PhD

Assistant Professor

Research emphasis: Interactions between neurons and glia that are required for the proper development and function of the nervous system, using

gene chip and molecular techniques.



#### **Robert Stamper, MD** Professor; Director, Glaucoma

Professor; Director, Glaucoma Service

Research emphasis: Finding new, simpler, better ways to diagnose glaucoma early; finding better ways to monitor for glaucoma progression; and assessing new pharmacological and surgical ways to prevent vision loss.

*Clinical emphasis:* Glaucoma surgery and lasers, cataract surgery, and ultrasound biomicroscopy imaging, and specialized glaucoma procedures.

and Physiology



#### Jorge Alvarado, MD Professor of Ophthalmology

Research emphasis: To improve glaucoma diagnosis and treatment through a basic understanding of glaucoma

development and the impact of therapies on cells of the eye. Breakthrough research in cellular therapeutics, characterizing the molecular basis for a novel approach to repairing the damaged drainage system in glaucoma for a sustained period of time. *Clinical emphasis*: Medical and surgical management of adult and pediatric glaucomas, including glaucoma surgery and lasers, cataract surgery, and ultrasound biomicroscopy imaging, and specialized glaucoma procedures.



Research emphasis: Clinical

trial principal investigator, including evaluation of an entirely new class of medication, Memantine, for progressive glaucoma; and Ocular Hypertension Treatment Study (OHTS). Population-based American Chinese Eye Study to determine major causes of blindness.

*Clinical emphasis:* Glaucoma surgery and lasers, cataract surgery, and ultrasound biomicroscopy imaging, and specialized glaucoma procedures.

#### 3 INNER NUCLEAR LAYER



Neuroscienœs Program UCSF-UC Berkeley Bioengineering Program

Research emphasis: Showing how neurons communicate in retinal disease, to determine which activities the molecules can inhibit or excite, through studies of calcium regulation of glutamate release from rods and cones.



David Krizaj, PhD Assistant Adjunct Professor

Research emphasis: Studies of cellular signaling mechanisms involved in photoreceptor degeneration using novel imaging and molecular techniques. Emphasis on ion channels and transporters regulating calcium and cell death in models for retinitis pigmentosa, retinal dystrophies, and macular degeneration.

#### 4 INFLAMMATION OF ALL LAYERS



Ralph and Sophie Heintz Research Laboratory

Research emphasis: Understanding the pathogenic mechanisms of ocular infections, including molecular and cellular studies of herpes simplex virus and varicella zoster virus; development of molecular assays for the diagnosis of infectious retinitis and for determining genetic risk factors for inflammatory eye disease.

*Clinical emphasis:* Medical and surgical management of infectious and inflammatory ocular disease, with an emphasis on ocular disease due to the herpes viruses.



#### Nisha Acharya, MD

Assistant Professor of Ophthalmology and Co-Director of the Uveitis Service, Francis I. Proctor Foundation

Research emphasis: Clinical and translational research in the field of ocular infectious and inflammatory diseases, including designing and implementing clinical trials which will aid ophthalmologists in providing evidence-based treatment for their patients.

*Clinical emphasis:* Treating patients with infectious and inflammatory diseases of the eye, including using immunomodulatory therapies to control inflammation.



Ira Wong, MD, MS Professor; Director, Ocular Inflammatory Disease and Uveitis Clinic

Research emphasis: Discovery and use of new anti-inflammatory drugs; the epidemiology of uveitis; development of innovative surgical techniques.

*Clinical emphasis:* Ocular inflammatory disease and uveitis.

### Exceptional First-Time NIH Research Grant Award

Dr. Hilary Beggs Investigates Causes of Eye Disease

G rants from the National Institutes of Health (NIH) have been increasingly difficult to secure, with recent government cuts – and it is almost unheard of for someone to score high enough for a research project to be funded the first time around, as Hilary Beggs has so ably done," says Interim Chair Stephen McLeod, MD. "This government funding is the lifeblood of all academic departments, and accounts for the lion's share of our research revenues."

Assistant Professor of Ophthalmology Hilary Beggs, PhD, is one of a very small number of scientists awarded a major first-time NIH Research Project Grant (RO1) to support health-related research. Only 18% of new RO1 applications are funded, and just 4% of investigators under 35 receive an RO1 grant on their first application.

In order to be funded in this highly competitive process, the researcher must submit a comprehensive proposal showing preliminary data and the methodology of all proposed experiments over the 5-year grant proposal period. Each proposal is reviewed by peers who are experts in the field, ranked against competing proposals, and only the top proposals are funded.

Dr. Beggs received RO1 support for a 5-year project on Mechanisms of Cell-Matrix Interaction and Signaling in Lens Development, using molecular, cellular, biochemical,

### Research to Prevent Blindness Award

Dr. Daniel Schwartz's Physician-Scientist Award

etina Service Program R<sup>etma Sor</sup>, Associate Professor Daniel M Schwartz, MD, has been granted a Physician-Scientist Award by Research to Prevent Blindness (RPB), which provides unrestricted funding for his innovative research. Dr. Schwartz's work has led to the development of imaging technology that promises to improve early detection of age-related macular degeneration and provide novel therapeutic strategies.

These awards allow physicians at U.S. medical institutions to devote more time to clinical eye research activities, and provide greater opportunities for specialized study with direct application to the human condition. Dr. Schwartz is one of only 28 physician scientists at 18 institutions who have received the award since it was established in 2000.



Dr. Schwartz is endeavoring, through highly collaborative research, to make rapid progress on solving early-stage age-related macular degeneration (AMD). Moving research forward quickly requires teams of specialists applying knowledge and skills from a variety of perspectives – medicine, engineering, and chemistry, for example.

Dr. Schwartz's current collaboration with engineers and scientists at Caltech provides hope for a breakthrough for macular degeneration, working toward the development of a novel therapy to diagnose and treat the disease early in its course, before visual loss has actually occurred.

RPB has awarded major research grants to UCSF Ophthalmology this year in support of well-established scientists and promising young faculty, as well as department-wide ophthalmic research. The world's leading voluntary organization supporting eye research, RPB provides generous unrestricted funding for vision research.



and structural approaches to provide unique insight into the mechanisms of eye development.

Dr. Beggs joins 14 UCSF Ophthalmology faculty members who have been granted NIH funding, including 12 RO1 grants. In 2004, the UCSF School of Medicine was the third-largest recipient of NIH research dollars, receiving a total of \$379.9 million from all awards in the nationally competitive process, according to rankings released by the NIH.

### March of Dimes Award

Dr. Erik Ullian Receives O'Connor Research Award

Neurobiology researcher, Assistant Professor Erik Ullian, PhD, was awarded a prestigious Basil O'Connor Starter Scholar Research Award from the March of Dimes Birth Defects Foundation. This two-year award supports research on birth defects by young scientists embarking on independent research careers.

Dr. Ullian is studying a critical and poorly understood process that occurs during development of the visual system and nervous system; this process may be responsible for infant blindness, as well as diseases affected by nervous system



development, such as autism, schizophrenia, and Alzheimer's disease. The process of "synapse elimination" occurs during infancy and youth, when an oversupply of synaptic connections is initially created, followed by a targeted elimination of all but the most useful synapses. A defect in this maturational process may underlie subsequent blindness or neural disorders.

Dr. Ullian and colleagues have identified two synaptic proteins that are developmentally regulated, and when these proteins are removed in a transgenic model, they have shown that the normal synaptic elimination process does not occur correctly. The investigators are now examining the detailed molecular and cellular mechanisms that make the synaptic elimination process possible, so the eye or nervous system might be protected from subsequent disease.

The Basil O'Connor Award is named after the March of Dimes' first chairman and president. Founded in 1938, the March of Dimes is a national voluntary health agency whose mission is to improve the health of babies by preventing birth defects and infant mortality, through research, community services, education, and advocacy.



### PROCTOR PROCTOR Energizing the Work of Dr. Todd Margolis

Jeannik Littlefield Inspires Innovative Research

Internationally recognized as the preeminent center for the prevention of blindness worldwide through research and teaching focused on infectious and inflammatory eye disease, the Francis I. Proctor Foundation was established in 1947 as an Organized Research Unit at UCSF.

Sometimes a significant gift comes when it is most needed and can leverage further support to make a real difference in the lives of others – the doctor, the researcher, as well as the patients for which they care. In this story of generosity, future generations and people around the world suffering from vision loss and blindness will have hope.

Generous long-time contributor to That Man May See, Mrs. Jeannik Littlefield, made a recent \$1 million gift to support Todd P. Margolis, MD, PhD, Rose B. Williams Chair for Research in Corneal Disease, and director of the Francis I. Proctor Foundation for Research. Mrs. Littlefield's gift is for medical discovery in the field of infectious eye disease.

"I wanted to help a highly competent and caring doctor move his research along more quickly," said Mrs. Littlefield. "It makes me feel especially good when I hear that our gift encouraged others to contribute. That seems to be the way it works."

Eradicating Blinding Conditions Worldwide With infectious diseases on the rise worldwide, research such as Dr. Margolis's has the potential to eradicate blinding conditions, here in the U.S. and in parts of the developing world.

Director of the Ralph and Sophie Heintz Research Laboratory, Dr. Margolis conducts research aimed at understanding the pathogenic mechanisms of infectious and inflammatory eye disease, with a focus on ocular diseases caused by the herpes viruses.

Dr. Margolis's clinical experience is in the medical and surgical management of infectious and inflammatory ocular disease. He has a particular interest in ocular disease due to the herpes viruses, and AIDS-associated ocular infections. His clinical research is aimed at understanding the pathogenic mechanisms leading to atypical presentations of ocular

infections. This work dovetails closely with his laboratory research, providing valuable clinical samples and raising important questions that can be addressed at the laboratory bench.

The Proctor Foundation's mission is to combine state-ofthe-art laboratory research with rigorous clinical application in the field to provide practical answers for prevention of blindness locally and worldwide.

"Thanks to Mrs. Littlefield, I have been given a remarkable opportunity," says Dr. Margolis. "Her gift provides me with the ability to accelerate my laboratory work and pursue more high-risk projects. It is our hope that the work funded by Mrs. Littlefield will ultimately improve clinical treatment and management for patients with infectious eye disease. For this I am grateful."

Recent Gifts to That Man May See for the Proctor Foundation

Other recent gifts to the Proctor Foundation, through That Man May See, include support from the Bernard Osher Foundation. The gift for John P. Whitcher, MD, MPH, and Thomas M. Lietman, MD, is for the continuing study of trachoma in the sub-Saharan desert. Bent on the ultimate elimination of this disease, the most common cause of blindness in the developing world and linked to extreme poverty and poor sanitation, this project will expand research in Ethiopia to cover districts in the northern part of the country, monitoring the treatment of over 200,000 more individuals, mostly children, in these areas.

### Discovering New Ways to Treat Macular Degeneration

Bernie Newcomb Supports Revolutionary Investigators

Our goal is to discover how age-related macular degeneration (AMD) causes blindness, through improved diagnostics and understanding of the disease mechanism, in order to develop therapies that will improve vision," says AMD investigator, Associate Professor Jacque Duncan, MD.

Thanks to a generous grant from hightechnology entrepreneur Bernie Newcomb, the revolutionary research of Dr. Duncan and her colleagues, Professor of Anatomy and Ophthalmology Matthew LaVail, PhD, and Associate Professor Robert Bhisitkul, MD, PhD, is advancing new approaches to protecting the vision of patients with AMD.

"My role is to add vitality to Jacque's work in the lab through funding, and I am happy to be able to support such a dedicated researcher," says Mr. Newcomb, founder of the Internet stock-trading company E\*TRADE.

With the goal of improving vision for patients with wet AMD who receive PDT

(photodynamic therapy), the research of Drs. Duncan, LaVail, and Bhisitkul has shown that specific growth factors (such as BDNF or brain-derived neurotrophic factor) can restore vision as they protect cells from PDT light damage. This exciting work was published in November 2004. With generous support from Mr. Newcomb, the research was based on Dr. LaVail's ground-breaking studies showing that growth factors can protect cells from light damage. Drs. Duncan and LaVail have now studied other growth factors and the effect of repeated PDT treatments at 3-month intervals, and these results have been submitted for publication.

A new device now under evaluation by Dr. Duncan could provide more exacting diagnosis and description of AMD damage at an early stage. "Until now, irregularities of the eye have limited our ability to visualize the cells affected earliest in AMD," Dr. Duncan explains. With the adaptive optics scanning laser ophthalmoscope, invented at the UC Berkeley School of Optometry by Associate Professor of Vision Science Austin Roorda, PhD, the investigators can closely examine patient retinas to provide insight into the mechanism of vision loss among patients with diverse retinal disorders.

To improve therapy for early AMD (the dry form of AMD), the investigators have embarked on a study of the mechanisms of cholesterol metabolism in the retina. Generous funding from Mr. Newcomb supports a new project to study statin medications in a preclinical model of AMD. "We suspect that improving the efficiency of cholesterol metabolism using statin medications (such as Lipitor/ Atorvastatin) will reduce the risk of vision loss due to AMD," says Dr. Duncan.

Drs. Jacque Duncan and Matt LaVail share insights from their study of age-related macular degeneration (AMD).





### **Helping Patients** with Serious Eye Problems

Dr. Ayman Naseri Named Veterans Administration Chief of Ophthalmology

here is a great deal of satisfaction in being able to L help patients at the Veterans Administration, many of whom have serious eye problems," says Ayman Naseri, MD, who was named chief of ophthalmology at the VA and assistant professor of ophthalmology at UCSF, where he specializes in cataract surgery and teaches residents. At the San Francisco VA Medical Center, Dr. Naseri is responsible for clinical care, education, and research in ophthalmology. He leads UCSF faculty, optometrists, and residents in providing over 15,000 patient visits a year.

"The opportunities for patient care, research, and education are wonderful here," says Dr. Naseri, explaining why he returned to San Francisco from the Mayo Clinic in Arizona, where he was a cornea and cataract specialist. "I also appreciate the intellectual curiosity that permeates the department."



"Our goal is to make this a more efficient place, clinically and surgically, while maintaining a high level of patient care," Dr. Naseri says. "We are updating our equipment and techniques, and we are working to streamline the preoperative and postoperative patient flows to make this a more pleasant experience for patients."

The VA has recently acquired advanced equipment to facilitate diagnosis and patient care, including OCT (optical coherence tomography) for high-resolution cross-sectional views of the retina; the Humphrey Visual Field Analyzer; a new tool for accurately measuring the eye before cataract surgery, the Zeiss Humphrey IOL Master; and a corneal topographer to measure subtle changes in the curvature of the cornea that can affect vision.

#### Patient Care and Research Team

"Our patients are very patient and understanding of the complexities of delivering health care," Dr. Naseri says.

"UCSF faculty come to the VA on a regular basis for patient care and teaching," Dr. Naseri says, including VA Director of Ophthalmic Clinical Pharmacology Allan Flach, MD, PharmD; UCSF and VA Retinal Service Director Daniel Schwartz, MD; oculoplastic surgeon, Associate Professor Kimberly Cockerham, MD; and Glaucoma Service Director Professor Robert Stamper, MD. They work closely with 15 members of the clinical faculty, as well as two full-time staff optometrists, Bernard J. Dolan, OD, MS, and Andrew Mick, OD, who also provide patient care, research, and education at the VA.

Two new ophthalmic health technicians have also been approved to join the VA department, to assist in patient measurements, screening, and data gathering.

"The opportunities for patient care, research, and education are

wonderful here," says Dr. Avman Naseri. pictured with patient Lowe Hong.

"Dr. Eugene de Juan will be spearheading our laboratory research program," Dr. Naseri notes, "and we are very excited that he will be joining us." (See page 1 story on Dr. de Juan.)

Dr. Naseri's research is focused on cataract surgery and how cataract surgery is taught. His study at the Mayo Clinic of a modified technique to improve teaching of a critical step in cataract surgery (hydrodissection) is published in the British Journal of Ophthalmology Online.

#### New Orleans to Arizona to San Francisco

A native of New Orleans, Dr. Naseri attended Emory University School of Medicine in Atlanta. He interned at the Mayo Graduate School of Medicine in Scottsdale, Arizona, and was a resident at UCSF Ophthalmology and a fellow in cornea and refractive surgery at the UCSF/Proctor Foundation.

Prior to joining the UCSF faculty, Dr. Naseri was a cornea and refractive specialist and surgeon at the famed Mayo Clinic in Scottsdale, Arizona, where he maintained a clinical practice and conducted research.

An avid golfer, Dr. Naseri lives in San Francisco but goes to the East Bay or to Marin for sunny and warm golf outings.

### Two Roads Diverged Dr. Frederick Riedel

This interview is part of the ongoing Cordes Connection, which features UCSF Ophthalmology alumni.

When Fred Riedel, MD, recalls his residency at UCSF Ophthalmology, he describes two paths he might have followed - orthopedic surgery and ophthalmology: "both great programs." He talks about his gratitude for UCSF Ophthalmology faculty and clinical faculty, Wayne Caygill, MD, Stacy Mettier, MD, and Sam Kimura, MD. He also counts That Man May See board member emeritus Jim Livingston among those who have influenced his life.

But the first UCSF ophthalmologist to influence Fred's career was ophthalmic plastic surgery pioneer Professor Crowell Beard, MD, who met Fred in Rochester, New York, where Fred's mother-in-law was a nurse

"I was destined to be an orthopedic surgeon," as Fred tells the story. Fred's father-in-law, who was an orthopedist, was happy with his own career, and he thought it would be good for Fred to follow the same path - maybe even take over his practice one day.

The military intervened, and Fred and his young bride, Judy, found themselves in Athens, Greece. As Fred's military service was drawing to a close,

his mentor, Dr. Kimura, stayed in touch with Fred, urging him to consider ophthalmology.

The Riedels' daughter, Tori, now a veterinarian, was born while they were in Greece. Their son, John, born after they returned to the U.S., is the West Coast institutional trading director for Wachovia Securities.

#### Fishing With Sam Kimura

"Sam was a real enthusiast," says Fred, who recalls days of fishing with Dr. Kimura. "Sam talked about That Man May See all the time. It was as though he was able to see into the future - long before anyone else. Sam projected that State of California funding would diminish, and that we needed to be forward thinking and make a plan for philanthropy, if we wanted to make this the best place it can be, for research, teaching, and patient care."

So, in 1973, Fred came to UCSF Ophthalmology to finish his studies as an ophthalmologist, and since graduation, he has been in private practice in Walnut Creek. "Working in this field is a real pleasure," he says. "Every day, you do something that improves the quality of people's lives. And, it's intellectually challenging."

Fred describes UCSF Ophthalmology as well positioned for the future. "We have superb people, many of whom other departments would love to have. As I reflect on my



training, I don't want to boast, but I was exposed to the best of the best."

His advice to current residents in ophthalmology: "The single most important thing is to enjoy what you are doing. It may be demanding work and emotionally draining, but it's also emotionally rewarding. Find some aspect you really enjoy and put your heart into it." •

### Teacher, Clinician, Inventor

Dr. John Stanley Retires

he most lasting part of my ophthalmic career has been my work as a teacher," says Professor John Stanley, MD, who retired this year as chief of ophthalmology at the San Francisco Veterans Administration (VA) Medical Center. "As a teacher, you must stay at the forefront of your field to seek out what will work for the future."

"I have taught over 180 residents at UCSF, Wake Forest University, and the Cleveland Clinic, and watched them and helped them grow," he says. Some of Dr. Stanley's eminent students are glaucoma surgeon, UCSF Professor Jorge Alvarado, MD; cornea surgeon, Professor David Hwang, MD; cataract specialist, UCSF Clinical Professor David Chang, MD; retina specialist, UCSF Associate Clinical Professor Richard McDonald, MD; ocular oncology specialist Devron Char, MD, director of the Tumori Foundation, which supports and performs eye tumor research; Resident Instructor Marsha Kavanagh, MD; corneal and refractive surgery specialist Daniel Goodman, MD; Marin County ophthalmologist Robert Anderson, MD; and Dalhousie University Professor Raymond Paul Leblanc, MD, who is head of ophthalmology and president of the National Coalition for Vision Health in Canada. "A lot of these individuals are my friends, today."

"John Stanley has trained two generations of ophthalmologists who have gone on themselves not only to take care of patients but also to train other ophthalmologists throughout the country," says Director of Pediatric Ophthalmology and Resident Training Douglas Fredrick, MD. "His impact on medical training and research has been profound."

#### Implants to the Ultra-Thin Lens

When Dr. Stanley joined the UCSF faculty in 1976, intraocular lens implants were rarely used in the Bay Area. "I had done advanced cataract surgery (phacoemulsification) and intraocular lens implantation in North Carolina," he recalls. "I further developed these techniques at the VA Hospital and at UCSF in my private practice. I taught the residents and other faculty members as well to do phacoemulsification and intraocular lens implantation."

He was first in the Bay Area to use the posterior chamber intraocular lens implant invented by Las Vegas surgeon Steven P. Shearing, MD (a former UCSF resident), which dramatically changed the treatment of cataracts worldwide.

In 1984, Dr. Stanley was the first to do refractive surgery at UCSF, starting with radial keratotomy (RK), and proceeding to other refractive procedures and finally to laser treatment (LASIK).

Once he heard about diffractive optics developed at Lawrence Livermore Laboratories for fusion research, Dr. Stanley set to work on an ultra-thin diffractive intraocular lens that could successfully focus light for vision correction. "The technology was transferred to the corporate world, and today is the optical basis of a lens just coming to market as the Ultra Choice lens manufactured by the ThinOptX Company," he says.

#### Fascinated by Ophthalmology

After Dr. Stanley graduated from Harvard Medical School in 1958, he first came to UCSF as an intern, followed by a move to Baltimore for work in cardiology with the U.S. Public Health Service and at Johns Hopkins Medical School.

Fascinated by ophthalmology, Dr. Stanley returned to California, where he completed a residency in ophthalmology at UCLA under Bradley Straatsma, MD, followed by fellowships in corneal disease (Claes Dohlman, MD) and neuroophthalmology (David Cogan, MD) in Boston. His first job as a doctor was as a staff member at the Cleveland Clinic. An academic career in ophthalmology began in 1967, when he joined the faculty at Wake Forest University in Winston-Salem, North Carolina. Dr. Stanley returned to UCSF in 1976, when he was recruited by the then new UCSF Ophthalmology chair, the late Steven Kramer, MD, PhD, to head the Ophthalmology Division at the San Francisco VA Medical Center, and become a member of the UCSF Ophthalmology faculty. "It was the best job in the whole department, where I could be my own boss," he says.

Now Dr. Stanley will truly be his own boss. He and his wife Manel are moving to Gilroy, where they will enjoy their many hobbies and share more time with each other.

John Stanley, MD

![](_page_12_Picture_17.jpeg)

### Honoring 20 Years of Service

Oculoplastic Surgeon Dr. Stuart Seiff

Chief of Ophthalmology at San Francisco General Hospital (SFGH) and managing a new ophthalmic medical practice, Professor Stuart R. Seiff, MD, has been recognized by the Department of Ophthalmology for 20 years' service on the ophthalmology faculty at UCSF. Although he retires as chief of oculoplastics this year, Dr. Seiff remains an active member of the department. "We are very grateful for Dr. Seiff's contribution as a member of the faculty and his leadership as chief of oculoplastics for 18 years," says Interim Chair of Ophthalmology, Professor Stephen D. McLeod, MD.

Dr. Seiff continues to do research, including a landmark study on successful management of acute thyroid eye disease using thyroid antibodies, with UCSF Ophthalmology Fellow Larissa Dragan, MD, recently published in *Ophthalmic Plastic and Reconstructive Surgery*, and a study of current incidence of traumatic optic neuropathy.

He is also involved with That Man May See in raising funds for the SFGH Mobile Eye Van that is used for the American Chinese Eye Study in Chinatown, directed by Shan Lin, MD. Dr. Seiff is also raising funds to support construction of a Mobile Eye Van that will be managed by the Thai Royal Family in Bangkok, and will be used by UCSF Ophthalmology for research in Thailand.

# Faculty News

#### Richard L. Abbott, MD

Appointments: Oversight Committee for the Elimination of Avoidable Blindness, World Health Organization, Geneva; Clinically Relevant Curriculum International Task Force, AAO; AAO/ABO Performance in Practice Task Force, Geneva; International Vision Research Collaborations Committee, NEI; Strategic Planning Committee, Executive Committee, Ophthalmic Mutual Insurance Company.

Invited Lectures: Management of Difficult to Treat Corneal Infections, Incorporating New Surgical Techniques Into Your Practice: An Ethical and Medicolegal Challenge, Preferred Practice Patterns in Clinical Practice in the U.S., Philippine Academy of Ophthalmology, Manila; Improving Quality of Eye Care in China Through Clinical Practice Guidelines, Chinese National Congress, Tianjin; The U.S. Experience in Medical Malpractice and Litigation in Refractive Surgery, Controversies in Pre-operative Prophylaxis for the Prevention of Endophthalmitis, Panamanian Ophthalmological Society, Panama City; Creating a Clinically Relevant Knowledge Base for Ophthalmologists, Council Medical Specialty Societies, Repositioning CME Summit, Rosemont, Illinois; Evidence Based Ophthalmology and Its Relation to Pay for Performance, Corporate Advisory Council, San Francisco.

#### Jorge A. Alvarado, MD

Awards: Best Speaker of the Day, The Royal Hawaiian Eye Meeting, Maui. Invited Lectures: Samuel Kimura Memorial Lecture, UCSF Ophthalmology Grand Rounds; Mechanism of Action of Selective Laser Trabeculoplasty (SLT): An Update, The Royal Hawaiian Eye Meeting 2006, Maui; Genotype and Phenotype Correlation in Congenital Glaucoma: CYP1B1 Mutations, Goniodysgenesis and Clinical Characteristics, 2006 American Ophthalmological Society Meeting, Half Moon Bay; SLT: How Does it Work?, The Royal Hawaiian Eye Meeting 2005, Waikoloa, Hawaii; Analisis del N.O. en el Glaucoma; Glaucoma de angulo cerrado: acontecimientos nuevos; Update en terapeutica cellular para el Glaucoma, XIII Jornadas Nacionales de Salud Ocular, Punta del Este, Uruguay.

#### Hilary E. Beggs, PhD

Awards: Mechanisms of Cell-Matrix Interaction in the Developing and Diseased Eye, 5-year grant, National Institutes of Health R01.

#### David R. Copenhagen, PhD

Appointments: Acting Chairman, Department of Physiology, UCSF School of Medicine. Awards: NIH 5-year training grant to train predoctoral students and postdoctoral fellows in the biology of vision and visual diseases.

Invited Lectures: Properties and Experience-Dependent Development of ON and OFF Pathways in Retina, UC Berkeley; Role of Neurotrophins in Experience-Dependent Development of the Retina, National Institute of Neurological Diseases and Stroke, Washington, DC.

#### Jacque L. Duncan, MD

Awards: High-Resolution Retinal Imaging in Patients with Inherited Retinal Degenerations, 5-year award, Foundation Fighting Blindness; Career Development Award, Foundation Fighting Blindness.

Invited Lectures: The Impact of Light on the Rate of Retinal Degenerations, Visiting Professor, Hospital for Sick Children, Toronto, Canada.

#### Allan J. Flach, MD, PharmD

Awards: Senior Honor Award, American Academy of Ophthalmology; Jerome W. Bettman Award, Prevent Blindness, Northern California.

Invited Lectures: Tuck Asbury Lecture, Conference Keynote Address, Annual Midwest Ophthalmology Conference, University of Cincinnati Department of Ophthalmology and Cincinnati Eye Institute, Cincinnati; *Misuse and Abuse of Topically Applied NSAIDs*, Cordes Society Meeting, San Francisco; *Medical Therapy of the Glaucomas*, Visiting Professor, University of Washington, Seattle; *Treatment of Cystoid Macular Edema Following Cataract*  Surgery, Washington Academy of Eye Physicians and Surgeons, Seattle; Perioperative Treatment of the Cataract Patient, Pacific Cataract and Laser Institute, Boise, Idaho.

#### Douglas R. Fredrick, MD

Honors: Chairman, Professional Education Committee, American Association for Pediatric Ophthalmology and Strabismus; Credentials Committee, UCSF; Clinical Studies Steering Committee, UCSF School of Medicine.

Awards: Innovators in Education Grant, UCSF Academy of Medical Educators. Invited Lectures: Invited Visiting Professor, 21st Annual Registrars' Conference, University of Sydney, Australia; UCSF Sixth Annual Ernest K. Goodner Lecturer, Department of Ophthalmology; *Childhood Blindness*, UCSF Ophthalmology Grand Rounds; *Interventions for the Treatment of Retinopathy of Prematurity*, World Congress of Ophthalmology, Brazil; *Vision Therapy: Fact vs. Fiction*, UCSF Pediatric Grand Rounds.

#### Shan C. Lin, MD

Awards: The Glaucoma Foundation Clinician-Scientist Award; American Academy of Ophthalmology Achievement Award.

Invited Lectures: Efficacy and Safety of Endoscopic Cyclophotocoagulation in Refractory Glaucomas Using Updated Techniques, European Society of Cataract and Refractive Surgeons, Lisbon, Portugal; Clinical Trials in Glaucoma: How They Have Impacted Clinical Practice, World Ophthalmology Congress, Sao Palo, Brazil; Neuroprotection: Separating Fact from Fiction, Glaucoma Research and Education Group Glaucoma Symposium; Isolation and Characterization of Fetal Trabecular Meshwork Cells for In Vitro Research, American Glaucoma Society; The Role of the Cytoskeleton in Outflow Obstruction of POAG, Glaucoma Grand Rounds, Wills Eye Hospital, Philadelphia; The Role of UBM in Angle Closure Management, Asia Pacific Academy of Ophthalmology; Singapore; Trauma in Glaucoma, Stanford Basic Science Course in Ophthalmology; Phaco-Chopping Techniques, Harvard Medical School Cataract Surgical Training Conference, Boston; Chinese Eye Study, Frederick C. Cordes Eye Society; Grand Rounds, National Taiwan University.

#### Todd P. Margolis, MD, PhD

Appointments: International Vision Research Collaborations Committee and Indo-U.S. Joint Working Group, National Eye Institute; Vision Clinical Scientist Development Program External Advisory Committee, Harvard.

Honors: Best Doctors in America 2005-2006.

Invited Lectures: Thomas H. Pettit Lecture, UCLA Jules Stein Eye Institute; Visiting Professor and Department of Ophthalmology Talk, Harvard Medical School; *HSV Ocular Disease: Clinical Pearls and New Concepts in Viral Latency*, Emory Medical School; *HSV Ocular Disease and VZV Ocular Disease*, Corneal Society of Thailand; *HIV Associated Ocular Disease*, Royal College of Ophthalmology of Thailand; *Establishment and Maintenance of HSV Latent Infection*, Schepens Eye Research Institute, Massachusetts Eye and Ear Infirmary, Boston; *New Concepts in VZV Ocular Disease*, Stanford University.

#### Stuart R. Seiff, MD

Awards: Eye Van Award, Mobile Eye Service, California Association of Public Hospitals. Honors: Guest of Honor, Oregon Academy of Ophthalmology; Guest of Honor, Argentine Society of Ophthalmology.

Invited Lectures: California Society of Plastic Surgery; Special Faculty, Hawaiian Ophthalmological Society; Visiting Professor, Ophthalmology Grand Rounds, University of Medicine and Dentistry of New Jersey.

#### Erik M. Ullian, PhD

Awards: The Role of Neuronal Pentraxins in Visual Circuit Formation, Basil O'Connor Starter Scholar Research Award, 2-year grant, March of Dimes Birth Defects Foundation.

### Farewell to a Visionary

Remembering Dr. Steven Kramer, Former UCSF Ophthalmology Chair

he visionary chair of the Department of Ophthalmology for 27 years, Steven G. Kramer, MD, PhD, former professor and Theresa M. and Wayne M. Caygill, MD Chair in Ophthalmology, died at his home from complications of diabetes on December 24, 2005. He was 64.

Dr. Kramer joined the UCSF Ophthalmology faculty in 1973. Two years later, at the age of 36, he was appointed the youngest-ever chair of the department, succeeding Michael Hogan, MD.

In 2002, Dr. Kramer celebrated his retirement, leaving an unprecedented legacy for ophthalmology at UCSF and worldwide.

Dr. Kramer was a thoughtful leader whose skill as a fundraiser inspired That Man May See to successfully complete a building campaign that created the Koret Vision Research Laboratory and the Beckman Vision Center, state-of-the-art research and clinical facilities on the UCSF Parnassus campus. Dr. Kramer's leadership attracted the foremost in ophthalmology to UCSF, expanding the department from 6 full-time faculty members to 30 world-renowned educators, clinicians, and researchers, all dedicated to seeking cures for blindness and loss of sight. The proximity of these scientists under one roof has fostered major discoveries and unprecedented collaborations, resulting in medical breakthroughs and innovative devices to save sight and lives. His passion for teaching resulted in a first-rate, competitive residency program, influencing the future of eye care.

Raised in Chicago, Dr. Kramer attended Harvard College and received his medical degree at Western Reserve University. Dr. Kramer received ophthalmology and PhD training at the University of Chicago, where he developed special expertise in microsurgery and ocular pharmacology. In addition to his superb medical abilities and compassion, he was a skilled magician who delighted family and friends and performed annually at the UCSF Ophthalmology residents' graduation.

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Dr. Kramer's greatest pride was his family. He is survived by his wife, Susan Garrett; his children, Janice, Kenneth, Daniel, Susan, Ryan, and Molly; and five grandchildren. He is also survived by Bernadette Kramer, who continues to work closely with That Man May See in fundraising efforts.

The family requests that donations in honor of Dr. Kramer be made to That Man May See (TMMS), 10 Koret Way, Box 0352, San Francisco, CA 94143-0352; phone: 415.476.4016; or e-mail tmms@vision.ucsf.edu.

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### **UCSF Faculty Make Scientific Presentations**

2005 Annual Meeting in Chicago

Richard L. Abbott, MD The Compendium of Evidence-Based Eve Care: Doctor: How Much Experience Do You Have?; Risk Management Pearls in Cataract Surgery; Office-Based Surgical Procedures: Pearls from the Proctor; Claims, Lawsuits and LASIK: How Do You Reduce The Legal Risks?; How PPPs Help with: MOC, Pay for Performance, Quality of Care; Update: Pay for Performance: The Role of PPPs and EBM with Pay for Performance; History of Maintenance of Certification; Update: Practicing Ophthalmologists Curriculum and the MOC Review Course.

Jorge A. Alvarado, MD Combined Phacoemulsification and Glaucoma Drainage Implant Surgery; Lasers in Glaucoma; Endoscopic Cyclophotocoagulation During Cataract Surgery in the Management of the Plateau Iris Syndrome. Kimberly P. Cockerham, MD, FACS

Causes of Diplopia You Do Not Want to Miss; Diplopia; Ophthalmologic Manifestations of Community-Associated Methicillin-Resistant Staphylococus Aureus Infection; The Tearing Patient: A Systematic Approach; Endoscopic Forehead and Eyebrow Elevation; Practical Rheumatology for the Ophthalmologist: What, When, and Why.

Eugene de Juan, Jr., MD Age-Related Macular Degeneration: Evolving Treatment Options and Surgical Management of AMD; Rapid Recurrence of Geographic Atrophy Following Full Macular Translocation for Nonexudative Age-Related Macular Degeneration.

Allan J. Flach, MD, PharmD Medical Therapy of Open-Angle Glaucoma: A Complete Review of the Pharmacodynamics, Pharmacokinetics, and Toxicity of All Drugs Potentially Useful; Medical Therapy of Open-Angle Glaucoma: Prevention and Treatment of Complications; Medical Therapy of the Glaucomas.

Douglas R. Fredrick, MD What's New and Important in Pediatric Ophthalmology and Strabismus; Myopia: Do Any Therapies Slow or Halt Its Progression?; Cataracts in Children: Diagnosis and Treatment.

Creig S. Hoyt, MD Pediatric Neuro-Ophthalmology.

David G. Hwang, MD Evolving Concepts in Ocular Infectious Disease; Lacrimal Silicone Intubation for Anatomically Successful but Functionally Failed External Dacryocystorhinostomy; Pearls from the Proctor. Todd P. Margolis, MD, PhD Evolving Concepts in Ocular Infectious Disease; Role of PCR and Other Molecular Diagnostics in Clinical Practice: Pearls from the Proctor.

Stephen D. McLeod, MD Specialized Medicines in Cornea and External Disease; Pearls from the Proctor.

Joan M. O'Brien, MD Retinoblastoma 2005.

Daniel M. Schwartz, MD New and Emerging Technologies in Cataract and Refractive Surgery.

Stuart R. Seiff, MD Fundamental Facelifting Techniques in Aesthetic Oculoplastic Surgery; Basic Oculoplastic Surgery; Endoscopic Forehead and Eyebrow Elevation; Botulinum Toxin, Fillers, and More; Fear Factors: Things Most Feared in Oculoplastics – Traumatic Optic Neuropathy.

Robert L. Stamper, MD Point-Counterpoint in Glaucoma: The Experts Debate; Spotlight on Glaucoma: Glaucoma Care and Technology – Alternative Tonometry: New and Improved?

John A. Stanley, MD Small-Incision No-Stitch Non-Phaco Cataract/IOL Surgery: Phacofracture – Back to the Future.

John P. Whitcher, MD, MPH 2005 International Forum: The Changing Face of World Blindness; Pearls from the Proctor.

### New Directions in Ocular Therapies

UCSF 2005 December Course

Internationally renowned investigators – including Susan H. Day, MD, president of the American Academy of Ophthalmology and ophthalmology chair at California Pacific Medical Center, as well as members of the UCSF Ophthalmology faculty – updated practicing ophthalmologists on advances in ocular therapy at a unique educational forum presented by the department in San Francisco each December.

Robert Ritch, MD, chief of glaucoma service at New York Eye and Ear Infirmary, delivered the Proctor Lecture, speaking on exfoliation syndrome, which has only recently been recognized as the most common identifiable form of glaucoma. New insights, said Dr. Ritch, have increased the importance of accurate diagnosis of this age-related type of glaucoma, which causes severe optic nerve damage and an increased risk of postdilation IOP (intraocular pressure).

Guest speakers also included Lee Jampol, MD, professor and chairman of ophthalmology, Northwestern University; Kuldev Singh, MD, MPH, associate professor of ophthalmology, Stanford University School of Medicine; and Mark A. Terry, MD, director of corneal services, Devers Eye Institute, Portland.

"This was a cutting-edge meeting," says Associate Professor Daniel Schwartz, MD, who chaired the program with Professor Robert Stamper, MD, and Professor and Interim Chair of Ophthalmology Stephen D. McLeod, MD.

THANK YOU Thanks to the following donors for educational grants in support of the December Course program:

Alcon, Allergan, Santen, Genentech, Novartis Ophthalmics, Pfizer, Bausch & Lomb, Heidelberg Engineering, Merck, Carl Zeiss Meditec, Ellman International, Inc., Eyetech, ISTA Pharmaceuticals, Lippincott Williams & Wilkins, Lumenis, Inc. The following UCSF faculty made presentations at the UCSF December Course, *Ophthalmology* 2006: New Directions in Ocular Therapies:

Jorge Alvarado, MD David Chang, MD Kimberly Cockerham, MD Jacque Duncan, MD Allan Flach, MD, PharmD Douglas Fredrick, MD Jonathan Horton, MD, PhD David Hwang, MD Alexander Irvine, MD Thomas Lietman, MD Shan Lin, MD Stephen McLeod, MD Joan O'Brien, MD Daniel Schwartz, MD Stuart Seiff, MD Robert Stamper, MD John Stanley, MD Jay Stewart, MD Erich Strauss, MD John Whitcher, MD, MPH

The following UCSF clinical faculty made December Course presentations:

Gary Aguilar, MD David Chang, MD John Hetherington, MD Charlene Hsu-Winges, MD Andrew Iwach, MD J. Michael Jumper, MD H. Richard McDonald, MD J. Earl Rathbun, MD A. Sydney Williams, MD

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## Board

### TMMS Welcomes New Board Members

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Dr. Ossama Hassanein Ossama R. Hassanein, PhD, is the managing partner of Newbury Ventures.

A veteran of the data communications industry, he has played active and diverse roles for over 30 years in the industry as an educator, entrepreneur, corporate executive, and venture investor.

He is director and founder of Technocom Ventures, a seed financing venture capital company managed jointly with France Telecom in Paris. Chairman of the board of nCipher in England, he was formerly chairman of Highwave Technologies in France and High Deal in France. Dr. Hassanein is also a co-founding investor and current or former board member of several companies including Corvis Corporation, Broadwing Corporation, BDNA Corp, and NetCentrex.

Dr. Hassanein was previously founder and chairman of ACC, a WAN remote access company, acquired in 1998 by Ericsson. Prior to founding ACC, he was a venture capitalist and executive vice president of Berkeley International Capital Corporation; and before that he was an international executive with Northern Telecom

Dr. Hassanein received his BASc in electrical engineering (distinctions, first-class honors) from the University of Alexandria, his MASc in electrical engineering, and MBA from the University of British Columbia. He completed his PhD in electrical engineering at the University of British Columbia, and also holds a PhD in business administration from the California Coast University.

Born and raised in Alexandria, Egypt, he still maintains close family ties and enduring friendships there. He is an

avowed fan of Mediterranean history. cuisine, and culture. He and his wife Marian have two children.

These days, Dr. Hassanein commutes between Paris and Silicon Valley, acting as Newbury's ambassador to the European portfolio companies, incubation centers, and financial community.

#### David Glotzer

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David Glotzer is the vice president of business development at Mellon Private Wealth Management and is well

F DIRECTORS

known among board members of That Man May See. Mellon has been funding the popular Eye Opener series of events to present the most entrepreneurial and experimental projects of UCSF Ophthalmology to the public.

Prior to his career with Mellon Mr Glotzer was a professional fundraiser, beginning in 1997. He was the Western campaign manager for Brown University, and director of development at Lick-Wilmerding High School. He has worked in development for many Bay Area institutions including the San Francisco Museum of Modern Art, the San Francisco Opera, the San Francisco Art Commission Neighborhood Arts Program, and the Golden Gate National Park Association. He was the first executive director of the San Francisco County Fair and Exposition in 1981.

Prior to his arrival in San Francisco, Mr. Glotzer was the founding editor and publisher of Mulch Press, an independent publishing company based in New York and Northampton, Massachusetts. He and his wife Charlotte Meyer live in the East Bay.

Dr. Kelvin K. Tang

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correct for refractive error, and provide patients with the greatest comfort." Dr. Tang adds: "It is incredible to have world-renowned ophthalmologists right here at UCSF to refer to if glaucoma, cataracts, or other serious eye disease is discovered "

#### Fitting Contact Lenses

"Having contacts should be a convenience, providing optimal visual clarity and comfort throughout the day," says Dr. Tang, whose specialty includes lens fit for patients with difficult eye conditions. He fits contacts for patients with corneal disease such as kerataconus, pellucid marginal degeneration (PMD), or corneal implants (keratoprosthesis). Dr. Tang recalls one patient who went from having difficulty counting his fingers at a 6-inch distance to having 20/70 visual acuity with carefully fitted contact lenses

VISION Optical will provide contact lenses with the newest materials and designs for different visual requirements; and a full range of multifocal gas-permeable and soft lenses, contacts for astigmatism, color contacts, and custom lenses will be available.

#### Teaching Tomorrow's Eye Care Providers

At UCSF, Dr. Tang joins the optometry team of Salena Lee, OD, FAAO, and Roland Jung, OD. "I wanted to be in an academic institution where I could see patients, educate tomorrow's optometrists, opticians, and ophthalmologists, and do research," says Dr. Tang.

As part of their training, Dr. Tang will teach optometric interns and ophthalmology residents advanced refractive techniques, and how contact lenses work. The examination facilities are designed for patient comfort, with the latest diagnostic instrumentation. VISION Optical will be a paperless office, keeping all medical records electronically so they can be easily accessed at a later time.

Dr. Tang's research will focus on evaluating the nextgeneration contact lens designs, materials, and cleaning solutions. He recently completed a one-year clinical fellowship at Jules Stein Eye Institute at the Geffen School of Medicine at UCLA, where he studied how to fit complicated contact lenses.

Dr. Tang received his undergraduate degree at UCLA, and his doctor of optometry degree at Pacific University College of Optometry in Forest Grove, Oregon. He lives in Walnut Creek, and is engaged to John Muir Medical Center dietitian Kylie S. Smith, MS, RD; they will be married in August in California's wine country.

"We sincerely hope that the new VISION Optical dispensary will be able to serve your needs by providing the best in eye care and outstanding customer service," says Dr. Tang.

#### **VISION** Optical

UCSF Department of Ophthalmology Millberry Union, Level-I 500 Parnassus Avenue Monday - Friday, 9:00 A.M. - 5:00 P.M. 415.476.3100 Insurance accepted.

# look sharper

### **VISION Optical Opens** in Millberry Union State-of-the-Art Exams, Contacts, and Glasses

Fashion eyewear from Marchon, Coach, Calvin Klein, and more. Progressive, no-line bifocals in a variety of materials, including Transitions. Custom-fitted gas-permeable and soft contact lenses, with the newest technology in designs and materials to accommodate challenging visual needs.

The new VISION Optical dispensary in Millberry Union offers comprehensive eye examinations, and the best options for clear, comfortable vision for children and adults

With a large variety of in-stock fashion frames, sunglasses, and contact lenses, opticians will share the latest information on lenses and frames, and recommend the best vision solutions. A knowledgeable full-service staff will be available if adjustments or repairs are needed.

"It is so rewarding to help people see better," says optometrist Kelvin K. Tang, OD, FAAO, who directs the new, state-of-the-art dispensary. "Our goal is to consider all the options so we can evaluate a patient's visual needs,

### Friends and Colleagues Honor Dr. Creig Hoyt

With Endowed Chair in His Name

hen Terry Caygill and Pearl Kimura go to lunch, they make things happen. Recently, the two met to celebrate their mutual birthdays, and, while toasting many productive years and happy memories with UCSF

Ophthalmology and That Man May See (TMMS), the two women decided it was time to initiate a campaign for a chair to honor the retirement of Creig S. Hovt, MD, who has served as chairman of the ophthalmology department for the past three years, following a distinguished career at UCSF.

Mrs. Caygill and Mrs. Kimura seedfunded the campaign with their own major gifts as challenge funds. Then they put a plan in motion to gather the rest of the \$500,000 needed to name the Deborah Hovt and Creig S. Hoyt, MD Chair. Soon afterwards, Mrs. Kimura encountered TMMS benefactor Bernie Newcomb. On the spot, she asked him to participate with

a lead gift of his own. He said "yes," and the ball was rolling.

Other lead funders came forward with gifts from Tom, Jan, Tommie, and Christopher Bird; and from the Stephen S. and Paula K. Smith Family Foundation. Many others responded to the challenge: colleagues, grateful patients, and friends. On the evening of April 26, following the quarterly board meeting of That Man May See, ophthalmology faculty and friends presented Dr. Hoyt and his wife, Debbie, with the chair at a surprise dinner.

#### It Had to Be a Surprise

"The chair honoring Creig had to be a surprise," said Stephen McLeod, MD, interim chair of UCSF Ophthalmology. "Creig's modesty would never have allowed us to tell him about the event, nor the chair, in advance of the occasion. "We had to be surreptitious as well as speedy, or he would have caught on and left town, rather than be feted and praised for his work," explained Dr. McLeod.

Soon into his chairmanship of the department, Dr. Hoyt announced an ambitious array of projects to expand the department's excellence in research, teaching, and patient care. These included new faculty positions, eye clinic improvements, and the creation of an innovative vision technology project, the Collaborative Vision Research Group, designed to bring new ideas to patient care more quickly.

Formerly the Jean Kelly Stock Distinguished Professor and holder of the Theresa M. and Wayne M. Caygill, MD Chair in Ophthalmology, Dr. Hoyt has served UCSF as resident, researcher, professor, physician, healer, and Renaissance man. Dr. Hoyt is a graduate of Amherst College and Cornell University School of Medicine. He trained as a resident in ophthalmology and neurology at UCSF, and completed a fellowship at Royal Children's Hospital in Melbourne, Australia.

Recognized internationally for his work, Dr. Hoyt joined the UCSF faculty in 1977, with a joint appointment in ophthalmology and

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pediatrics. During his distinguished career, he has been renowned as a captivating speaker, delivering hundreds of invited lectures around

> the world. In addition, he has authored a prodigious number of original publications which advanced scientific understanding of optic nerve hypoplasia, gaze disorders, nystagmus, delayed visual maturation, cortical visual impairment, strabismus, and congenital ocular syndromes.

#### Landmark Infant

Cataract Study One of Dr. Hoyt's outstanding contributions to the field was his pioneering study demonstrating that infants with congenital cataracts can achieve good vision throughout their lives if they have corrective surgery soon after birth. The

motivation for this bold approach came from the brain development research of neurobiologists David H. Hubel, MD, and Torsten N. Wiesel, MD, whose work was recognized by the 1981 Nobel Prize, which showed that the visual cortex remains plastic for a critical period during infancy.

Dr. Hoyt is the first non-British editor of the British Journal of Ophthalmology. In 2002, he was one of only a few Americans ever invited to present the Doyne Memorial Lecture to the Oxford Ophthalmologic Congress.

With his British colleague David Taylor, MD, FRCS, FRCP, FRCOphth, DSc(med), Dr. Hoyt has produced a uniquely comprehensive reference on pediatric ophthalmology, Pediatric Ophthalmology and Strabismus (3rd edition). The 1300-page text, a comprehensive array of information from leading international experts, featuring state-of-theart research and procedures, is an entirely revised edition that will be a staple in the field. He also co-authored a classic textbook on strabismus management with his longtime colleague William V. Good, MD.

Whatever Dr. Hoyt takes on, he does it with gusto, whether it be bicycling, kayak racing, reading great books, listening to classical music, or weaving Navajo rugs. Noted by Dr. Hoyt as his most honorable achievement is the mentoring of students as the future ophthalmologic leaders of the profession.

As a tribute to Dr. Hoyt, Gavin Newsom, mayor of the City and County of San Francisco, proclaimed April 26, 2006, as Creig S. Hoyt, MD, and UCSF Ophthalmology Day.

For information about how to participate in the Deborah Hoyt and Creig S. Hoyt, MD Chair, please contact Kathleen Rydar at That Man May See, at 415.476.4016.

(l eft)· Leadership gifts for the endowed chair came from Pearl Kimura, left, Bernie Newcomb, Paula Smith, Steve Smith, and Theresa Caygill. Not pictured and also lead funders of the chair are Tom, Jan, Tommie, and Christopher Bird.

#### (Right).

Friends gathered in the atrium of the World Trade Club before the dinner honoring Dr. Creig Hoyt at a surprise celebration of his retirement from UCSF Ophthalmology.

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#### Thank You for Generous Contributions to the Deborah Hoyt and Creig S. Hoyt, MD Chair in Ophthalmology

Leadership Gifts Bernard A. Newcomb Fund at Peninsula Community Foundation Theresa M. Caygill Tom, Jan, Tommie & Christopher Bird Pearl T. Kimura Stephen S. and Paula K. Smith Family Foundation

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Dr. Stephen McLeod, professor and interim chair of ophthalmology, presents Dr. Creig Hoyt with a framed tribute honoring Creig's retirement as well as the contributors to the endowed chair.

### Honor Roll of Generous Contributors

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## New TMMS Staff Assisting Donors

Veronica Masterson and Danielle Pickett

eet the newest members of the staff - Director of Individual Gifts Veronica Masterson, and Development Assistant Danielle Pickett - focused on assisting donors to That Man May See, the support foundation for UCSF Ophthalmology.

"That Man May See is expanding its vision, to be better able to serve the aspirations of our faculty and the needs of our contributors," says Kathleen Rydar, president of TMMS. "We welcome two highly regarded professionals who can help increase support to make medical breakthroughs possible."

Veronica J. B. D. Masterson, who works with individual donors to TMMS, is experienced in both the business world and the nonprofit sector. She provides information and recognition for members of the Chairman's Forum for Innovation, founded in 2004 to acknowledge donors of \$1000 and above. These generous gifts accelerate research, advance education, and ensure high-quality vision care, including targeted contributions and unrestricted gifts that provide the greatest latitude in enhancing vision discoveries.

As vice president and managing director of marketing and investor relations for the \$2 billion company Hamilton Financial Corporation, Veronica helped take the corporation public. When she became a parent, she rededicated herself to nonprofit work, helping to raise

funds and chart new dimensions for Bay Area organizations. She created a new, award-winning fundraiser for the Junior League; she also served as development chair for The San Francisco School and for the San Francisco Shakespeare Festival. Early in her career, she worked in development for Choate Rosemary Hall, and several nonprofits in San Francisco and New York. Her experience covers annual funds and endowments, and strategic planning from the ground up.

Veronica did graduate work at New York University and holds a BA from Wesleyan University in Connecticut. She says that her initiation into the health care field was as a candy striper at the age of 13.

Veronica and her 10-year-old daughter live in San Francisco. In the early mornings, you might find Veronica at Lake Merced, where she rows crew with the San Francisco Rowing Club.

"I am honored and proud to be part of this effort supporting the dedicated professionals at UCSF Ophthalmology," Veronica Masterson says. "Their research and care have a tremendous impact around the world."

Danielle A. Pickett may be the first voice you hear at TMMS, as she monitors the reception desk, manages the database, and provides support for TMMS and its

![](_page_17_Picture_30.jpeg)

Eleanor and Ira G. Wong, MD Family Foundation

Veronica Masterson and Danielle Pickett

contributors. Originally from Massachusetts, Danielle worked as a public school teacher in Brooklyn before moving to San Francisco. She joined the TMMS staff to utilize her strong administrative skills in an environment where she could help effect positive change.

Danielle holds a master's degree from the City College of New York in English as a Second Language, and earned a BA at New York University. Her boyfriend. Will Schachterle, is also at UCSF, as a PhD student in immunology.

"I have relatives with macular degeneration," says Danielle Pickett. "That is one of my motivations for this work, to support the search for a cure for eye disease."

Please join us in welcoming Veronica Masterson and Danielle Pickett to the TMMS team. They look forward to meeting you and helping achieve our goals to further research and work for vision care.

### SIGHTINGS

![](_page_18_Picture_1.jpeg)

Dr. Stephen McLeod, interim chair of ophthalmology, with guest speaker for the annual Transamerica Lecture, Anthony Moore from Moorfields Eye Hospital and Institute of Ophthalmology, University College London, and his wife, Julia Moore.

**2** Candace and Dick Olsen, hosts for the Transamerica Dinner, celebrating Residents' Day and the Transamerica Lecture.

Brook Byers, former chair of the board of That Man May See, with Pearl Kimura, board member emerita, at UCSF Ophthalmology's memorial tribute to Dr. Steven Kramer.

In Jack Whitcher and Marilyn Whitcher at the memorial service for the late Dr. Steven Kramer, with Dr. Kramer's daughter, Susan.

**5** Bernard A. Newcomb and Gerry Marshall at the American Foundation for the Blind awards dinner in New York City: Bernie was the recipient for 2006 of The Helen Keller Personal Achievement Award. Dr. Creig Hoyt made the introduction with "An Ode to Bernie."

6 Marion Faymonville, Dr. Stephen McLeod, Dr. Jacque Duncan, Pearl Kimura, and Dr. Creig Hoyt at the 2006 Helen Keller Achievement Awards. Dinner hosted by Pearl Kimura to celebrate the annual Hearst lecture,

this year given by Dr. Shigeaki Ohno, on the tenth anniversary of his Hearst International Fellowship at UCSF Ophthalmology. Dr. Ohno traveled to the U.S. from Sapporo, Japan, and is pictured with Catherine A. Pyke, program officer of the William Randolph Hearst Foundations

Catherine Cunningham and Flora Komes at That Man May See's April 2006 UCSF Ophthalmology Open House.

Jeff Bleich with father-in-law David Pratt and Mellon's David Glotzer at the Open House.

10 Betty Tight with Charles Homer and Ted Tight during the celebration at UCSF Ophthalmology.

11 Marilynn and John Fulton join Dr. Shiu Kwok and Dr. Sam Aronson for a tour of the new Proctor Foundation offices and lab with Dr. Todd Margolis at the Open House.

**12** Mort and Frannie Fleishhacker at the UCSF Ophthalmology Open House. Frannie is on the board and executive committee of That Man May See.

13 Nina Srejovic with husband, John de Benedetti, board member of That Man May See, talk with Dr. David Hwang during the UCSF Ophthalmology festivities **14** Dr. Emma Dong and husband, Dr. Harry Chong, at the reception. Emma was a resident at UCSF Ophthalmology in 1946.

**15** Michael Cookson with Dr. Stacy Mettier at the Open House, where Dr. Mettier was honored for his many contributions to That Man May See and UCSF Ophthalmology.

16 Jose Perez, Linda Lee, David Collins, and Christian Fahlen and his daughter, Olive Fahlen, welcome visitors to the lab of Dr. Joan O'Brien, where researchers study retinoblastoma.

17 Dr. Jack Whitcher greets Kathleen Maher and Margo Wilhite at the Open House and tour of the Proctor Foundation.

**18** Dr. Stacy Mettier with Dr. Jack Hetherington at the UCSF Ophthalmology reception.

19 That Man May See board chair Marilyn Pratt welcomes guests to the Open House, where laboratories were on view and faculty gladly shared their latest research with members of the Chairman's Forum and special guests

20 Bee Mullen and Dr. Raymond Mullen at the Open House.

V | S | 0 | S Summer 2006

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