



VISIONS

Koret Vision Institute + Beckman Vision Center + Department of Ophthalmology

Spring 2005

University of California San Francisco + That Man May See

Focal Point



This issue of VISIONS reflects our strong reputation and expertise in Pediatric

Ophthalmology – caring for children and their families, and research aimed at eliminating vision loss and blindness in children. I hope you will enjoy learning more about two outstanding ophthalmologists with specialties in pediatrics, Douglas Fredrick, MD, and Joan O'Brien, MD.

You will also read about mentoring as an important part of the training at UCSF Ophthalmology, preparing the next generation of ophthalmologists. And we continue to attract the highest ranked young physician scientists in the country as residents and faculty.

I'm pleased to announce that Jay Stewart, MD, who came to UCSF as a resident from Harvard College and Harvard Medical School, is returning as a faculty member, following a prestigious retinal fellowship at USC Doheny Eye Institute. New faculty members offer a freshness and enthusiasm that breathe life into all of our work.

Thanks to That Man May See Board member and friend, Dick Olsen, our residents, fellows, and faculty were hosted at the annual Transamerica Dinner, following our Residents' Day 2005. We enjoyed rigorous and exciting presentations, and an inspiring lecture by our distinguished guest speaker, Andrew Dick, Professor of Ophthalmology at University of Bristol, UK.

Thanks to you, our striving for excellence is matched with the funds essential for progress. I assure you that our faculty appreciate the awards you make possible to further their sight-saving work. I thank you for your generosity.

Sincerely yours,



*Craig Hoyt, MD
Theresa M. and
Wayne M. Caygill, MD,
Endowed Chair
Jean Kelly Stock
Distinguished Professor
Chair, Department of Ophthalmology*



Ophthalmology Insight Saving Children's Vision

Pediatric Ophthalmology at the Forefront

We envision Pediatric Ophthalmology as saving children's sight for a lifetime," says Professor Douglas Fredrick, MD, Director of Pediatric Ophthalmology at UCSF's Beckman Vision Center + Koret Vision Institute. "Our work starts with the earliest visual development in the fetus, and extends to the visual rehabilitation of children who

have lost vision due to disease or trauma.

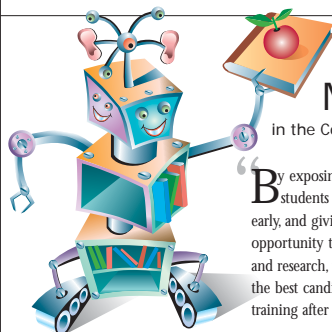
"We now have the technology to diagnose genetic disorders prenatally," Dr. Fredrick says. "That means we can care for vulnerable children immediately after they are born; and with UCSF as a center for fetal surgery, it is conceivable that one

day we will be able to treat sight threatening conditions prenatally."

Today, infants are fitted with intraocular lenses at UCSF replacing congenital cataracts that would otherwise cloud vision for the rest of their lives. In 1982, Creig Hoyt, MD, Professor and Ophthalmology Department Chair, changed the practice of infant cataract care internationally,

when he was first in the world to show that very early cataract surgery saves the sight of infants with unilateral congenital cataracts. Now a groundbreaking study by Drs. Fredrick and Hoyt and research scientist Hilary Beggs, PhD, is examining the cause of congenital cataracts and long-term outcomes after treatment.

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Envision the Future Mentoring Medical Students

in the Competitive Field of Ophthalmology

By exposing UCSF medical students to ophthalmology early, and giving them the opportunity to do clinical care and research, we help them be the best candidates for specialty training after graduation," says

Professor Joan O'Brien, MD, Director of Medical Student Education in Ophthalmology and Director of Ocular Oncology.

"For the past 10 years, our medical students who apply for

ophthalmology residencies have all been accepted by their first or second-choice training programs, in a highly competitive process," notes Director of Resident Education in Ophthalmology

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A PEEK INSIDE:



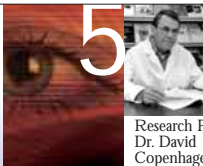
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Mentoring Medical Students

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Dr. Joan O'Brien



Dr. Douglas Fredrick

We congratulate this year's fourth-year medical students who have once again been offered residencies at top ophthalmology programs:

Elsa Aghaian	University of Southern California BA, Business Economics, UCLA. Born in Iran, raised in Los Angeles.
Ying Pan	University of Southern California BA, Human Biology, Stanford University. Born and raised in Fremont, CA.
Isabella Phan	University of California, San Francisco BS, Anthropology, UCLA. Raised in Fremont, CA.
Michele Trager	University of California, San Francisco BS, Biological Sciences, Stanford. Born in Seattle, raised in Danville, CA.
Alli Zahedi	University of Pennsylvania BS, Biology, Rice University, Houston. Born in China, raised in Chicago.

and Director of Pediatric Ophthalmology, Professor Douglas Fredrick, MD.

"Our students' success is a testament to how well they are prepared by the mentoring we offer."

In each fourth-year Medical School class at UCSF, 5 to 10 students will decide to pursue ophthalmology as a career. They are paired with faculty mentors who guide them in intensive clinical and research training, including a 'sub-internship,' where they spend several months working full time at a clinic or in a lab, alongside residents and faculty. Students are interviewed by Dr. O'Brien and members of the faculty, and 'matched' to do clinical care or research studies.

"Many of the medical students at UCSF take a closer look at ophthalmology," explains Dr. O'Brien. "Those students learn the basics of eye anatomy and physiology and common ocular disease conditions, and practice microsurgical skills."

In their third year, medical students can elect a two-week rotation in ophthalmology to test-out their interest in the field. They can also work a half-day a week in an ophthalmology clinic, seeing patients under the supervision of an experienced ophthalmologist. Because these positions are so attractive, applicants are selected via a lottery.

This spring, the 150 third-year medical students at UCSF will be making their first career decisions. We welcome those who will become tomorrow's ophthalmologists. ●

Saving Children's Vision

Continued from page 1

At UCSF a newborn whose sibling has the devastating childhood eye cancer, retinoblastoma (RB), can be screened and treated within weeks after birth to protect the eyes from vision loss. Internationally known pediatric ocular oncologist, Professor Joan O'Brien, MD, Director of Ocular Oncology, is at the forefront in finding less toxic new therapies that are more effective in saving sight. (See *Faculty Profile of Dr. O'Brien*, page 3.)

Children come to UCSF from the Bay Area and beyond for specialty care in ophthalmology, because our research findings are quickly translated into sight-saving care. We offer the most advanced diagnosis and treatment by experts in multiple fields of ophthalmic medicine – including glaucoma, retina, reconstructive surgery, neonatology, neurology, radiology and oncology.

Treating Premature Infants
As medical intervention improves survival for small, premature infants, we see more children with developmental and neurologic problems. Our investigators are seeking interventions that can preserve these children's vision.

Our newest research targets early treatment for retinopathy of prematurity (ROP), with abnormal blood vessels in the retina that obstruct the vision of 80% of premature infants under 2.2 pounds. Dr. Fredrick and the neonatology staff will determine whether 'growth factors,' originally developed to treat macular degeneration, can halt this blinding disorder.

Congenital glaucoma can lead to lifelong blindness, without early treatment. A study of genetic samples from children at the Pediatric Glaucoma Clinic could determine the cause and optimal treatment. Glaucoma specialists Jorge Alvarado, MD, Robert Stamper, MD, and Shan Lin, MD, are joined by Dr. Fredrick in this research.

Another study using MRIs may predict vision problems in premature infants. Drs. Fredrick and Hoyt are collaborating with UCSF radiologists and



pediatric neurologists to establish the correlation between brain development and visual function.

Meeting the Clinical & Research Needs

of the Future
What will be possible for the child who has already lost sight? How can early intervention help with vision and with developmental and social function?

Within the decade, the new

Children's Hospital at Mission Bay could be the site of a unique Center for Visual Rehabilitative and Restorative Technologies at UCSF. "This is a unique opportunity to integrate clinical and research needs in ophthalmology for the coming century," says Dr. Fredrick.

At the new Children's Hospital, Dr. Fredrick explains, clinical care would be integrated with groundbreaking research of investigators like

neuro-ophthalmology specialist Jonathan Horton, MD, PhD, Professor of Ophthalmology, Neurology and Physiology, who is examining how the brain interprets electrical signals.

"We could harness this pioneering research so that children whose eyes don't work can have the opportunity to see."

"With state-of-the-art facilities, we can care for the sight of vulnerable children," says Dr. Hoyt. "As we develop the Pediatric Ophthalmology facility at Children's Hospital, we can anticipate the needs of the future." ●





Dr. Joan O'Brien: Finding New Ways to Treat Eye Cancer

When people are losing their sight to a life-threatening ocular cancer, there is tremendous urgency to the diagnosis and treatment of their disease. It is to save the sight and lives of children and adults with eye cancer that Professor Joan O'Brien, MD, has dedicated her professional life for the past 15 years. The Director of Ocular Oncology at UCSF, Dr. O'Brien holds the Pearl and Samuel Kimura Endowed Chair in Ophthalmology.

"It's really about the patients," Dr. O'Brien says, acknowledging her career as a highly respected and sought-after clinician, caring for children with the devastating childhood eye cancer retinoblastoma (RB); and her treatment of adults with eye tumors ranging from usually-

benign hemangiomas (purple, raised tissue) to potentially life-threatening ocular melanomas. Patients from infants to seniors come for expert treatment from all over the West Coast, and from as far as South America and the Philippines.

Dr. O'Brien has developed a multidisciplinary clinic for children with RB, where they see experts from all over the UCSF campus and have access to cutting-edge care. Adult patients have the additional benefit of highly focused radiation treatment with the proton beam at UC Davis, which is one of two major centers in the U.S. offering this therapy.

"As an academic physician, you are always leading three lives," Dr. O'Brien says. "You have a clinical

life, treating patients; a research life; and a teaching and administrative life."

Research to Find New Therapies

Dr. O'Brien is recognized internationally for her research on retinoblastoma – though her discoveries may be applicable to the majority of other cancers. In 1990, Dr. O'Brien identified the first transgenic model of RB, an important new tool for evaluating experimental therapies. Both the severity of the disease and her desire to make a difference led her to study the RB genetic pathway that may also be involved in the development of most other cancers.

UCSF was one of the first centers in the U.S. to treat young RB patients with chemotherapy to save their vision and their lives, under Dr. O'Brien's direction. Today, her laboratory is investigating novel chemotherapy agents to show that they are safe and effective. That research could lead to an understanding of the complex mechanisms involved in this disease.

Genetic research in RB is particularly important because 30-40% of patients have the inherited form of the disease. Young patients with suspected heritable RB and their families have extensive genetic testing so that siblings with the disease can be identified and treated early (often within weeks of their birth). Dr. O'Brien's laboratory is also investigating more cost-effective RB testing.

Respected Teacher

As Director of Medical Student Education in Ophthalmology, Dr. O'Brien oversees the curriculum and counsels medical students on their ophthalmology studies. She also teaches about the basics of ocular oncology clinical care and research.

In her own lab, she works closely with a select group of third and fourth-year medical students learning about research – some for a month, and others for as long as a year. Post-doctoral students, who might be

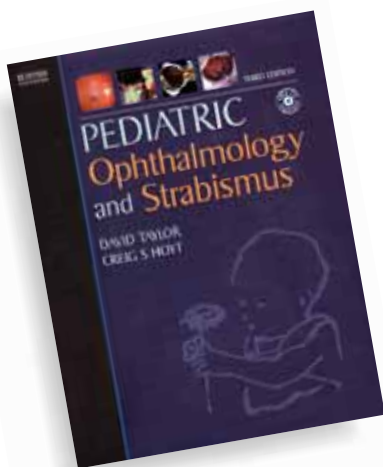
PhDs or physicians interested in specialty training, may work in the laboratory or in patient care, or in both.

From Middlebury to San Francisco
How does a literature and psychology major from Middlebury College in Vermont become a preeminent ophthalmology professor and investigator at UCSF?

After college, Dr. O'Brien asked people from different walks of life how they felt about their work, and found that physicians had the highest job satisfaction. She decided to become a physician, and completed pre-medical studies at Bryn Mawr College, before attending Dartmouth Medical School. She next completed a fellowship in ophthalmic pathology at Massachusetts Eye and Ear Infirmary at Harvard, initiating her career in ocular oncology.

Dr. O'Brien came to UCSF as a Clinical Fellow and Instructor in Ocular Oncology in 1992, after a residency at Harvard. She was named Director of Ocular Oncology in 1995.

Today, Dr. O'Brien lives in San Francisco with her husband, pediatrician James Wall, MD, who completed his residency in pediatrics at Dartmouth, and their energetic six-year-old son, John. ●



New Ophthalmology Text Comprehensive Treatment of the Child

Pediatric Ophthalmology and Strabismus (3rd Edition)
by David Taylor, MD, and Creig Hoyt, MD

As ophthalmic investigations become more powerful, the authors contend, pediatric ophthalmologists must consider all aspects of treating the child – including physiology, anatomy and psychology – and involve the family in patient management and care.

Ophthalmology Chair Creig Hoyt, MD, and his British colleague, David Taylor, MD, FRCS, FRCP, FRCOphth, DSc(med), have produced a uniquely comprehensive reference on pediatric ophthalmology. The 1300-page text is an entirely revised edition that will be a staple in the field.

Drs. Hoyt and Taylor have assembled an extensive array of information from leading international experts, featuring state-of-the-art research and procedures. The text covers diagnostics, investigative guidelines, and principles of managing specific eye problems in children. Dr. Taylor is Professor of Paediatric Ophthalmology at the Institute of Child Health in London. ●

The Patient's Point of View

Keyani Family Transforms Fear to Fortunate

Just before her fourth birthday, Louisa Keyani had a routine eye exam that revealed a congenital cataract. Her pediatrician, Charlotte Drew, MD, recommended UCSF Ophthalmology as the place to provide the answers for Louisa and her family. Douglas Fredrick, MD, Director of Pediatric Ophthalmology, operated on Louisa a few weeks later, removing the cataract and restoring her sight. Today, Louisa, a happy and talented child, has the gift of sight and many new friends at the UCSF Department of Ophthalmology.

"This was very sudden and the first experience of its kind in our family," describes Cathy Keyani,

Louisa's mother. "My husband, Ed, and I had to draw on our experience as teachers to guide us in doing what was right for Louisa," she explains. "As upset and fearful as we were, it was important to keep Louisa safe and calm."

"We went day by day until we met Dr. Fredrick," she continues. "We could breathe again when we met him; his calming presence put us all at ease. Everyone we encountered in Pediatric Ophthalmology at UCSF was wonderful."

"I'm grateful that by improving Louisa's vision, we can improve her quality of life dramatically, and that this bright



The Keyani family with Dr. Douglas Fredrick.

little girl has had an excellent outcome," says Dr. Fredrick. Without cataract surgery and an intraocular lens implant, it is likely Louisa would not have vision in one eye.

Innovative Motivation

One of the greatest challenges now for Louisa is to wear a patch on her healthy eye – something she must do for part of each day, until she turns eight. This will force the brain to accept the image from the "weaker" eye and help the visual system in this eye to develop. Wearing anything *different* can make a child self-conscious. Thanks to the creativity of her mother, Louisa plays a constructive game each day with a chart to record her progress and engage her in decisions about taking medications and gauging her behavioral responses in productive ways.

Cathy has encouraged other parents to try this method of engaging the child in the process with innovative motivation. She calls it "an incentive kit for the child's compliance." The Keyani family even provided Dr. Fredrick with samples of the kit to help other patients.

Her advice to other parents confronting medical challenges: "Always put the child's emotional needs before your own. Express your fears after they go to bed," she says.

"We all have things that happen to us that tell us not to take life for granted," says Cathy. "What Louisa learned about herself through this is amazing. She's a brave little girl and has gained such confidence in her abilities." ●

Macular Degeneration Q&A

by Robert Bhisitkul, MD, PhD, Jacque Duncan, MD, and Daniel Schwartz, MD

Patient Margaret Mallory, former Food Editor of the Oakland Tribune, asked our faculty to respond to questions about current research and care for macular degeneration at UCSF.

Q How is AMD (age-related macular degeneration) research going? How close are we to a possible cure?

A Five years ago, treatment for macular degeneration was limited to thermal laser, which damaged the vision cells over the wet AMD. Today, we have several new FDA-approved treatments.

Our scientists at the Koret Vision Institute are now exploring exciting new approaches to identify and treat AMD including:

- **AMD Light Treatment** – Diagnosing and treating early AMD with new imaging technology and light-activated drug delivery. (Daniel Schwartz, MD)
- **Growth Factor PDT Therapy** – Using growth factors to protect light-exposed retinal cells from damage in PDT

therapy for 'wet' macular degeneration. (Jacque Duncan, MD, Matthew LaVail, PhD, Robert Bhisitkul, MD, PhD)

- **Drug Studies** – Evaluation of promising new AMD drug therapies and basic science studies of a new class of drugs (using RNA interference to combat growth factors). (Robert Bhisitkul, MD, PhD)
- **AMD Diagnostic Center** – Cutting-edge diagnostic tests for patients with "dry" AMD to measure the impact of experimental treatments. (Jacque Duncan, MD)
- **RPE-Gene Defect Studies** – Development of RPE-specific gene therapy could apply to retinal degenerations when the functional gene defects are identified. (Matthew LaVail, PhD, Jacque Duncan, MD)
- **Tackling Early AMD** – Conference on devising new strategies to prevent visual loss (see Upcoming Continuing Medical Education listing, page 7).

Q What new AMD treatment has been approved by the FDA? How effective is it in halting progression of the disorder? Has it been tried at UCSF?

A Macugen® was approved by the FDA in December of 2004 to treat 'wet' AMD. Patients at UCSF first received Macugen treatment in January 2005.

Macugen inhibits the VEGF protein that causes abnormal blood vessel growth in AMD. The drug must be injected in the eye every 6 weeks. With this drug, there is reduced risk of visual loss after one and two years.

Another anti-VEGF drug, Lucentis (thuFabV2) is in clinical trials at UCSF as part of a national multi-center trial. Although it is not yet FDA-approved, 1 year results suggest it is effective in preserving vision in many patients with wet AMD.

Discovering How Vision Works Dr. David Copenhagen

Research scientist David Copenhagen, PhD, is driven by curiosity and a desire to understand the fundamental workings of the eye. "I get a lot of satisfaction from discovering the basic principles of how the retina functions and how it matures," he says, explaining his dedicated interest in the retina and the eye.

"The adult visual system relies on the concerted actions of hundreds of millions of precisely connected nerve cells," says Dr. Copenhagen. He is Professor of Ophthalmology and Physiology, and Director of Ophthalmology Research at UCSF. "How do all the nerve cells figure out the other neurons with whom they should communicate?" he asks.

"The visual system could be considered a complex computer system that builds itself from a collection of young nerve cells," Dr. Copenhagen explains. "Many of the connections are preprogrammed genetically. However the final refinement of the visual system's wiring requires that the eyes be able to see the best possible visual images. Older children with untreated congenital cataracts, or other unrecognized problems that impair vision during maturation, can have permanent, irreparable loss of vision."

Investigating Vision Quality in Infants
One of the quests of Dr. Copenhagen's laboratory is to discover how the development of retinal structure and function is influenced by quality of vision during infancy. A second quest is to discover which naturally-occurring molecules regulate this development.

Dr. Copenhagen's pioneering, basic research might ultimately lead to medical treatments to reverse the blinding impact of vision deprivation. A graduate of the Electrical Engineering program at Stanford, he holds a PhD in Bioengineering and Computer Sciences from UC Berkeley, with a specialization in neurophysiology, physiology and systems theory. He came to UCSF in 1972 as a Postdoctoral Fellow to learn more about the physiology of neurons in the retina, with Kenneth T. Brown, PhD, then-Professor of Physiology. Dr. Copenhagen has been a member of the UCSF faculty since 1977.

Learning how the retina is "wired"
In the retina, Dr. Copenhagen and his colleagues have discovered that the fine structures of some nerve cells (also called 'neurons') are 'pruned' during the early stages of development. This pruning, needed for the refinement of



Dr. David Copenhagen

vision, requires visual inputs. Without this early visual input, the neurons remain in an immature state, and vision remains less than optimal.

Dr. Copenhagen and his associates have found specific molecules called neurotrophins (BDNF or *Brain derived neurotrophic factor* and *Neurotrophin-3*) that play a role in refining early nerve connections and the fine structure of these nerve cells. Initial studies have shown that when the BDNF molecule is absent, the ganglion nerve cells in the retina do not get 'pruned' and the retina cannot develop 'sight' as it should.

"These findings suggest that BDNF might be able to offset and rescue visual impairments induced by visual deprivation such as a congenital cataract," Dr. Copenhagen says. "However, many more experiments must be done to prove the validity of this hypothesis," he emphasizes.

TMMS Awards Make Cutting Edge Research Possible
"Research awards from That Man May See are essential to our progress," says Dr. Copenhagen, who serves on the TMMS Peer Review Committee that evaluates faculty and student applications for support.

"As the recipient of one of the early Jane and Marshall Steel awards from TMMS, I was able to buy sophisticated instrumentation to do early work looking at responses of retinal neurons," he says. The preliminary results from these experiments helped fund a larger grant from the National Institutes of Health.

"With their restricted budgets, federal funding agencies increasingly support research that is based on solid preliminary evidence. Fewer than 20% of grant applications are funded by NIH," Dr. Copenhagen says. "With a TMMS award for preliminary research, scientists can experiment with promising new approaches as quickly as possible, to see if they will be successful. Data from these preliminary experiments enables us to successfully compete for NIH support that leverages the initial TMMS support many times over." ●

Q What other treatments are currently available for "wet" and "dry" AMD?

A The only currently approved treatment for "dry" AMD is prevention:

- Specific vitamin supplements (*Oxavite® PreserVision™* anti-oxidant/zinc tablets) have been shown to reduce the chance of developing advanced AMD and vision loss by ~25%.

For most patients with 'wet' AMD, treatment can slow vision loss, and some patients have visual improvement with Macugen (see above). Treatments for 'wet' AMD include:

- *PDT (Photo Dynamic Therapy)* – Dye that concentrates in abnormal blood vessels is activated by targeted laser light that closes the abnormal vessels, with minimal damage to the retina. This has become a mainstay treatment for patients with blood vessels under the *fovea* (central retina), though there may be retinal damage.
- *Macugen* – See *prior question*.
- *Argon Laser* – An intense beam of laser light closes leaking vessels. Now less commonly used, this non-selective treatment may damage the retina.

Q Which doctors at UCSF treat patients with AMD?

A Our retina faculty specializes in cutting-edge AMD diagnosis, treatment and research. We apply research advances as quickly as possible to improve patient care.

Dr. Robert Bhisitkul – AMD & clinical trials for new treatments.

Dr. Jacque Duncan – AMD & hereditary degenerations.

Dr. Daniel Schwartz – AMD & development of new prevention approaches.

For an appointment or consultation, please call (415) 353-2402. ●

Left to right:
Dr. Robert Bhisitkul,
Dr. Jacque L. Duncan,
Dr. Daniel M. Schwartz.





Dr. Todd P. Margolis

The Proctor Perspective Todd P. Margolis, MD, PhD

Solving Mysterious Cases in Ophthalmology

Since the beginning of his career, Todd Margolis, MD, PhD, has been motivated by the energy that can result from applying basic science to a clinical problem. "It's the 'aha' moment, when you can bring something from the laboratory into the clinic or from the clinic into the lab," explains Dr. Margolis.

As Professor of Ophthalmology at UCSF Director of the Francis I. Proctor Foundation, and Director of the Ralph and Sophie Heintz Research Laboratory (within Proctor), Dr. Margolis is able to live out his dream "to make a difference in the lives of others through applied research."

Dr. Margolis is a graduate of the UCSF School of Medicine, where he completed his residency after interning at San Francisco Children's Hospital. He holds a PhD in Neuroscience from UCSF; he completed Fellowships in Cornea, Uveitis, and External Disease at UCSF and at the UCLA Jules Stein Eye Institute; and he was a Postdoctoral Fellow at the

UCLA Department of Microbiology and Immunology.

Energized by the challenge and opportunity of the Proctor Foundation, Dr. Margolis sees medicine as a puzzle, in which both the clinic and the lab provide clues. "You investigate, try to piece the problem together, and complete the picture. It's intellectually and emotionally rewarding," he explains. Because many Proctor patients have seen numerous doctors before coming here, Dr. Margolis refers to Proctor as "the place where we can take the time to listen, to delve, and to find solutions to otherwise mysterious cases. It's a critical thought process that has been handed down since Dr. Phillips Thygeson was a founding member of the Proctor faculty in 1947."

The Francis I. Proctor Foundation was established in 1947 as an Organized Research Unit at UCSF; to prevent blindness worldwide through research and teaching on infectious and inflammatory eye disease. The Foundation is recognized



as the preeminent center in the world in these disciplines.

Ocular Herpes Studies

Dr. Margolis is internationally recognized for his research on ocular disease caused by herpes simplex virus (HSV), aimed at understanding the cellular and molecular mechanisms of the disease, and preventing activation of the virus. These studies have received ongoing NIH grant funding for the past 15 years. He currently serves on the National Advisory Eye Council for the National Institutes of Health, and is a trustee of ARVO (Association for Research in Vision and Ophthalmology), the largest international organization dedicated to eye research. Dr. Margolis was recently rewarded with a Senior Scientific Investigator Award of \$65,000 from Research to Prevent Blindness (RPB), one of the world's leading non-governmental

organizations supporting eye research; the grant will help fund Dr. Margolis' research into the regulation of HSV infection and, ultimately, improved treatment and management for patients with HSV eye disease.

Thanks to the Proctor Endowment and additional generous support, specialists working with Dr. Margolis treat patients from throughout the Bay Area, as well as patients from other parts of the country and beyond. Proctor Foundation Faculty do clinical research and care around the world, in remote regions of Ethiopia, India, Argentina, China and Japan, under the direction of John P. "Jack" Whitcher, MD, MPH, and Tom Lietman, MD.

The Proctor team is addressing its international vision through the creation of the World Blindness Center at UCSF, with an ambitious program of lab remodeling, endowed chairs, and endowments to fund pilot research projects. They are seeking \$2.5 million to complete the project.

In addition to the Proctor Endowment, funds for the Proctor Foundation last year were generously provided by the International Trachoma Initiative, the Bernard Osher Fund, the City of San Francisco, the Bechtel Foundation, the Bodri Foundation, That Man May See, and the National Institutes of Health. ●

That Man May See Faculty Awards

Leveraging Further Research Funding

"One of the greatest pleasures of serving on the Board of That Man May See is our ability to fund early-stage research," says TMMS Board Chair, Stephen S. Smith.

Recognizing the research expertise and immediate needs of four members of the faculty, the TMMS Board awarded research funds for basic research and equipment. Recommendations for awards were made by a Faculty Peer Review Committee, modeled after the National Institutes of Health (NIH) review process. The TMMS Board announced four recipients of funds:

Hilary E. Beggs, PhD: For research on understanding the cell signaling molecules that are critical for normal lens and retinal development. These findings could uncover new therapeutic targets for congenital eye defects such as microphthalmia and cataracts.

David R. Copenhagen, PhD: Developing advanced microscopic tools to image the real-time function of single nerve cells in the retina. These methods should improve medical diagnosis by providing valuable insight into how the retina behaves under normal and pathological conditions.

Matthew LaVail, PhD: Electroretinography (ERG) non-invasively determines the functional status of the retina. The new ERG will be used for virtually all experiments on pharmaceutical and gene therapy for inherited and age-related retinal degenerations, including macular degeneration.

Robert L. Stamper, MD: For continuing research using Accumap which records visual fields objectively, directly from the patient's visual cortex. Less complicated than the standard visual field test for glaucoma, the Accumap can be used for patients who cannot sit through standard testing. Studies will evaluate the accuracy of Accumap testing vs. standard visual field testing.



The Value of Seed Funding

These awards are made with the hope that faculty can use the seed funds to apply for even greater support from government sources. For example, Tom Lietman, MD, and John Whitcher, MD, MPH, received a grant of \$30,000 from That Man May See to study the use of antibiotics to treat trachoma, for which there is no effective vaccine. This disease is the leading infectious cause of ocular morbidity in the world and the second leading cause of blindness.

"Because of That Man May See's award, we were able to get full speed ahead and set up the trachoma project," reports Dr. Lietman. Subsequently, Dr. Lietman received \$1.9 million from the NIH to test the use of antibiotics over five years, in the hopes of eliminating the disease. The grateful researcher says, "The TMMS money helped us get it started." ●



Dr. David F. Chang

Dr. David F. Chang Why Mentors Matter

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

“Whether through patient care, teaching, clinical research, or international volunteer work, ophthalmologists have so many ways to make a lasting impact.” So responds David F. Chang, MD, when asked if he would still recommend medicine as a career.

Dr. Chang completed his residency at UCSF in 1984, coming to the Bay Area with a BA (Summa Cum Laude) and MD degrees from Harvard. During his 20 years in private practice in Los Altos, he has continued teaching cataract surgery to residents as a UCSF clinical professor. Dr. Chang explains that it was his residency experience at UCSF that ultimately shaped his career.

“We were fortunate to have full-time faculty that took a personal interest in the residents,” says Dr. Chang. “For cataract surgery, Dr. Jorge Alvarado taught me to be a precise technician. Dr. Steven Kramer (Department Chair Emeritus) nurtured an interest in instrumentation and technology. Dr. Alex Irvine modeled the importance of ethics and bedside manner. Most



important, Dr. John Stanley encouraged me to try rather than fear new ideas, such as phacoemulsification (now the preferred form of cataract removal).”

Dr. Chang’s fellow residents at UCSF were Drs. Richard McDonald, Stuart Seiff, Greer Geiger, and Alex Zaffaroni (who is one of his partners in private practice). “I worked hard as a resident, just to keep up with this group,” he acknowledges. “Despite whatever prominence we currently enjoy, we still know enough to blackmail each other.”

As a member of the UCSF Collaborative Vision Research Group, Dr. Chang notes that he has been “fortunate to work with leading faculty members, Drs. Daniel Schwartz and Stephen McLeod, on exciting projects like the Calhoun adjustable IOL (intraocular lens implant) and the Synchrony Accommodating IOL (the lens implant

that replaces bifocals, allowing the eye to accommodate, to see both near and far objects).” Dr. Chang is the medical monitor for the upcoming FDA trial of the Synchrony lens, and he is an investigator in multiple clinical studies – ranging from the implantable telescope to the artificial iris implant. He recently organized a large multi-center prospective study on iris problems during cataract surgery, in patients who take the prostate drug Flomax.

Cataract Authority

An internationally recognized authority in cataract surgery, Dr. Chang is co-chief editor of *Cataract & Refractive Surgery Today*, and on the editorial boards of five other trade journals. He has designed popular cataract instruments, published numerous cataract papers and chapters, authored a best selling textbook on advanced techniques in cataract surgery, and he is editing the first virtual textbook of cataract surgery. He is in his fifth year as cataract editor for *Ocular Surgery News Hyperguides*, one of the largest online educational sites for ophthalmologists.

Dr. Chang recently began a five-year term as Chair of the AAO (American Academy of Ophthalmology) Annual Meeting Program Committee. “This is the third largest medical meeting in the United States, and it is a huge responsibility,” he says. He previously chaired the AAO Cataract Program Sub-Committee, and organized the first four

Spotlight on Cataracts symposia at the AAO Annual Meeting. Dr. Chang also serves on the AAO Cataract Ophthalmic Knowledge Base Panel, the AAO Cataract Preferred Practice Pattern Panel, and the Cataract Clinical Committee of the American Society of Cataract and Refractive Surgery.

“Some of my role models were leading clinicians at UCSF who forged academic careers while in private practice,” notes Dr. Chang. “They included some of our best teachers, Drs. Brooks Crawford, George Hilton, Ariah Schwartz, Howard Schatz, H. Dunbar Hoskins, John Hetherington, and Robert Shaffer.”

Pacific Rim Center Advisor

That Man May See and the Department of Ophthalmology at UCSF are grateful that Dr. Chang will serve as an advisor to the newly formed Pacific Rim Center for Vision – focusing on research to combat devastating eye disease among Asian families and individuals [see *Visions* Fall 2004, page 4]. Dr. Chang has worked with the Aravind cataract surgeons in India, and he traveled to Nepal to work with the Himalayan Cataract Project in April.

“When we’ve all retired from ophthalmology,” says Dr. Chang, “we’ll realize that it was much more important to use our training to make a difference than to make a living.” ●

Eddies & Currents New Developments in Ophthalmology

December Course 2004

Featuring internationally renowned investigators, including guest speakers and UCSF faculty, the 2004 December Course for practicing ophthalmologists presented cutting-edge research and clinical advances in retina, pediatric ophthalmology, glaucoma, cornea, external eye disease and plastic and reconstructive surgery.

New treatments could emerge for macular degeneration, diabetic retinopathy, retinopathy of prematurity and other eye diseases, as a result of new studies of proteins that interact in complex ways to create abnormal blood vessel growth (*neovascularization*), said Peter A. Compochiario, MD, Professor of Ophthalmology at Johns Hopkins University, who delivered the keynote Proctor Lecture.

Speakers included Dimitri T. Azar, MD, Director Corneal External Disease at Harvard, on *Advances in Refractive Surgery*; L. Jay Katz, MD, Professor at Jefferson Medical College, Wills Eye Hospital in Philadelphia, on *What Have We Learned from NEI Clinical Trials?*; as well as UCSF faculty and clinical faculty members.

“Our speakers discussed some of the most exciting new developments in ophthalmology,” says Daniel Schwartz, MD who co-chaired the program with Robert Stamper, MD, Douglas Fredrick, MD, and Stephen McLeod, MD. Nearly 300 attended this highly-rated program.

Thank you to the generous contributors who made this program possible: Alcon, Pfizer, Eyetech, Novartis Ophthalmics, Santen Inc., Allergan, Bausch & Lomb and Heidelberg Engineering. ●



Upcoming Continuing Medical Education Programs:

Tackling Early AMD: Devising New Strategies to Prevent Visual Loss
November 11-12, Fairmont Sonoma Mission Inn

Ophthalmology 2006: New Directions in Ocular Therapy
December 1-2, Hotel Nikko, San Francisco

For information: Thelma DeSouza, 415-502-1127 or tdsouza@itsa.ucsf.edu

Honoring Lifelong Advocacy for Diversity in Medicine

Michael V. Drake, MD

Receives AAMC Nickens Award



Dr. Michael V. Drake

In recognition of his tireless efforts over the past 35 years to enhance diversity in the medical profession, Michael V. Drake, MD, who is the Steven P. Shearing Professor of Ophthalmology at UCSF and Vice President of Health Affairs for the University of California systemwide, received one of the highest honors bestowed by AAMC (the Association of American Medical Colleges). Dr. Drake became the fifth recipient of the Herbert W. Nickens, MD, Award.

Dr. Drake has been an advocate for the success of minority students since his medical education began at UCSF, where he received his medical degree in 1975, and completed his residency and fellowship training in ophthalmology. In the 1980's, when he joined the

Ophthalmology Department faculty, he organized a committee on recruitment and retention, which he chaired.

As systemwide Vice President, Dr. Drake oversees education and research activities at the university system's 15 health sciences schools, located on seven campuses. He was appointed to the California Health Manpower Policy Commission, and the federal Institute of Medicine, where he served on the committee that produced the 2004 report, "In the Nation's Compelling Interest: Ensuring Diversity in the Health Care Workforce."

Dr. Drake is principal investigator on active grants and contracts totaling over \$11 million, and maintains an academic

clinical practice. He has received numerous awards, including the School of Medicine's Clinical Teaching Award, the Ophthalmology Department's Samuel J. Kimura Teaching Award, the Chancellor's Award for Public Service, and the Martin Luther King Jr. Award. He was the UCSF School of Medicine Alumnus of the Year in 2000. Dr. Drake is a member of several national scientific and scholarly societies. He is the current president of the Alpha Omega Honor Medical Society, and serves as a trustee of the Association of Academic Health Centers. ●

The Department is proud to announce that as we were going to press, Dr. Drake was named Chancellor of the University of California, Irvine.

Faculty News

Richard Abbott, MD

Honors: Best Doctors 2005 by San Francisco Magazine; Selected Chair of World Health Organization Committee for Cost Reduction and Effective Improvement in Eye Care Product Services; featured speaker for PBS special on New Developments in Eye Care; inducted into American Ophthalmological Society.

Appointments: Executive Committee, PROJECT ORBIS International Program Advisory Council, Cyber-Sight Advisory Board; Executive Committee, World Ophthalmology Congress (Sao Paulo, Brazil-2006); Chair-Liaison committee for Maintenance of Certification, American Academy of Ophthalmology and American Board of Ophthalmology; Ophthalmology representative for Quality Improvement programs, Council of Medical and Surgical Specialties and AMA Consortium for Performance Measurement.

Elected: President, Pan-American Association of Ophthalmology.

Invited Lectures: Melvin L. Rubin, MD, Distinguished Lectureship, Florida Society of Ophthalmology; David Hull, MD, Distinguished Lectureship, Medical College of Georgia; Michael J. Hogan, MD, Memorial Lectureship, Cordes Society-UCSF; "Development of Practice Guidelines and Improving Quality of Eye Care Services in China," World Health Organization, Wuhan, China; "Ophthalmic Knowledge Base - Update and Plans for Future Use," Education Coordinating Council, American Academy of Ophthalmology; "The Current Ophthalmology Medicolegal Landscape: How We Got Here and How to Survive," Pacific Coast Oto-Ophthalmological Society Annual meeting; "Pre-operative Antibiotics and the Prevention of Endophthalmitis: Marketing Hype vs. Evidence," Manhattan Ophthalmological Society; "The Parameters of Informed Consent," American Ophthalmological Society.

Jorge A. Alvarado, MD

Invited Lectures: "Congenital Glaucoma: Management at UCSF," "Endoscopic Cyclophotocoagulation: Clinical Experience/How Does It Work?," "Selective Laser Trabeculoplasty: How Does It Work?," and "Ahmed Valve: Five year results in 200 Patients and Technique," XII Jornadas Nacionales de Salud Ocular Meeting, Montevideo, Uruguay; "SLT: How Does It Work?," The Royal Hawaiian Eye Meeting 2005, Waikoloa, Hawaii; "Update on Corneal Thickness," and "Glaucoma Surgery," The 3rd Glaucoma Summit, Yosemite, California; "Interactions between Endothelia of the Trabecular Meshwork and Schlemm's Canal in the Regulation of Transendothelial Fluid Flow," The 5th International Glaucoma Symposium (IGS) Cape Town, South Africa; "Interactions between Endothelia of the Trabecular Meshwork and Schlemm's Canal: Regulation of Transendothelial Fluid Flow," Annual Meeting of The American Ophthalmological Society, Sea Island, Georgia.

David Copenhagen, PhD

Invited Lectures: Chinese Academy of Sciences, Institute of Neuroscience, Shanghai, China; "The Neural Basis of Early Vision," Keio University School of Medicine, International Symposium for Life Sciences, Tokyo, Japan; "Synaptic Transmission," Gordon Conference, Meriden, New Hampshire; Department of Ophthalmology, University of Michigan School of Medicine, Ann Arbor, MI; Wayne Crill Honorary Lecture, Department of Physiology and Biophysics, University of Washington, School of Medicine, Seattle, WA.

Allan Flach, MD, PharmD

Appointments: President, Cordes Society; Executive Secretary, Pacific Coast Oto-Ophthalmological Society.

Invited Lectures: "Nutritional Ophthalmology," 8th Annual Surgical Therapy Update, Dana Point, California.

Elected: TMMS Board of Directors.

Creig Hoyt, MD

Invited Presentations: "Vision in the Brain Injured Child," Doyno Memorial Lecture, Oxford Ophthalmologic Congress, Oxford; Wingford Mao Memorial Lecture, Shantou, China.

David Hwang, MD

Invited Lectures/Professorships: Washington Academy of Eye Physicians and Surgeons, Seattle, WA; Beijing Union Medical College, Beijing, China; Kangnam St. Mary's Hospital and Catholic University School of Medicine, Seoul, Korea; University of Tokushima School of Medicine, Tokushima, Japan.

Appointment: Board Member, Ocular Microbiology and Immunology Group

Jennifer LaVail, PhD

Appointment: President Elect, Pan-American Society for Neuroirology; Invited Talks: Fundamental Issues in Vision Research: Molecular and Cell Biological Approaches, Marine Biology Laboratory/National Eye Institute course, Woods Hole, MA; Neurotropic viruses at the Crossroads, Magisterial Conference, Universidad Autonoma de Nuevo Leon, Monterrey, Mexico.

Tom Lietman, MD

Invited Lectures: "Tropical Ophthalmology," Mohammed Aziz Lecture, Wilmer Eye Institute, Johns Hopkins University, Baltimore, MD.

Todd Margolis, MD, PhD

Honors: Appointed to the National Advisory Eye Council; AAO Achievement Award; Awarded RPB Scientific Investigator Award.

Elected: ARVO trustee.

Stephen D. McLeod, MD

Invited Lectures: "Lasik Complications: Strategies for the Management of Flap Striae," The Royal Hawaiian Eye Meeting 2005, Waikoloa, HI; "Antibiotics Update in Treatment and Prophylaxis of Corneal and External Disease," Cornea, Refractive Surgery, and Cataract Symposium, San Francisco, CA; "Accommodating IOLs," Houston Ophthalmologic Society Meeting, Houston, TX; "Management of the High Risk Corneal Graft," Baylor University, Houston, TX; "Efficacy of Activity of the Fourth Generation Fluoroquinolones," Complementary Ophthalmic Residents Education (CORE) Program, Los Angeles, CA.

Joan O'Brien, MD

Honors: Invited Member, Macula Society Research Committee. Invited Lectures: "Retinoblastoma: Diagnosis and Treatment," "Current Research in Retinoblastoma," 15th Annual Claes H. Dohlman Visiting Professor, Harvard University, Massachusetts Eye and Ear Infirmary.

David Sretavan, MD, PhD

Invited Lectures: "Nanosurgery: A Novel Approach for the Treatment of Nerve Injuries," 23rd Annual JP Morgan Healthcare Conference, San Francisco, CA; "Prototype Devices and Core Technologies for Axon Repair," International Conference On Solid State Sensors, Actuators, and Microsystems (the premier scientific conference in MEMS and biosystems), Seoul, Korea.

Honors: Recognition for Excellence in Teaching, School of Pharmacy.

Robert Stamper, MD

Honors: Distinguished Alumnus, Washington University, St. Louis, MO; Association of University Professors in Ophthalmology Fellowship Compliance Committee. Invited Lectures: "Barriers to Glaucoma," Washington University, St. Louis, MO; American Academy of Ophthalmology meeting, New Orleans; "Update on Functional Testing in Glaucoma, Optic Nerve Imaging Systems, Revolutionary New Surgical Approaches to Glaucoma, Endocyclophotocoagulation," State University of New York, Upstate Medical Center Annual Meeting; "New Functional Testing in Glaucoma," UCSF Annual Course. Elected: TMMS Board of Directors.

Board OF DIRECTORS

New Members Join TMMS Board of Directors



Allan J. Flach, MD, PharmD, is a Professor of Ophthalmology at UCSF with a primary interest in pharmacology and cataract surgery. He is the Past President of Prevent Blindness Northern California, and the current President of the Cordes Society whose members include former UCSF ophthalmology residents and fellows and ophthalmology faculty. He and his wife Teri live in San Rafael.



Françoise (Frannie) Fleishacker lives in San Francisco with her husband Mort. She is involved with the American Conservatory Theater (A.C.T.) and the Garden Conservancy. She is a recent treasurer and active member of the Franciscan Club of San Francisco.



Tom Follett is a retired partner of Accenture, a global management consulting, technology services and outsourcing company. Tom is a member and past president of the ALS Association, Bay Area Chapter. He and his wife Gunilla live in Los Altos.



Larry Haimovitch is the President of Haimovitch Medical Technology Consultants. Larry has been an active Board member for 12 years with the Zen Hospice Project, a nationally recognized model to improve end-of-life care. He and his wife Carie reside in Mill Valley.



Gerry L. Marshall has been an active and effective member of community groups including the YMCA, and a fundraiser for causes such as childhood cancer, breast cancer, Alzheimer's and special needs for retirement communities. She lives in Palo Alto.



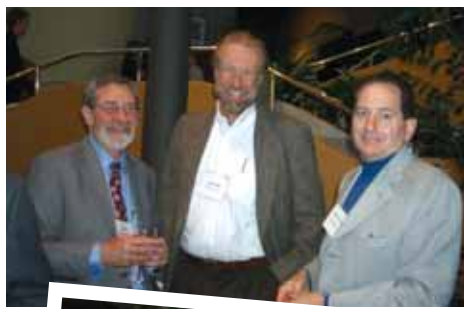
Isabel (Patsy) Schuchardt and her husband Robert live in San Francisco. She has been actively involved with the Edgewood Children's Center and San Francisco's Children's Hospital. Patsy is especially dedicated to supporting and raising funds for research aimed at finding a cure for macular degeneration.



Robert L. Stamper, MD, is Professor of Ophthalmology and Director of the Glaucoma Service at the University of California, San Francisco. He is on the Board of Directors of the Glaucoma Research Foundation, and a former Board member of the Jewish Federation of Greater East Bay. Dr. Stamper is Past President of the American Glaucoma Society, and served on the Board of Directors of the American Board of Ophthalmology. He is the author of two glaucoma textbooks. He and his wife Naomi reside in Berkeley. ●

SIGHTINGS

Bob Coakley, Executive Director of The Thomas J. Long Foundation, presents a check for \$100,000 to Kathleen Rydar, President of That Man May See. The award supports the Cellular Therapeutics research of Jorge Alvarado, MD, seeking an innovative cure for glaucoma.



John Hall, center, and Paul Conroy, right, both veteran Board members of TMMS, welcome new Board member, Bob Stamper, MD, to the meeting at the World Trade Club in San Francisco.



Two sisters, Judy Riedel and Janet Dinsmore at the Annual Vision Awards Dinner. Janet is on the Board of That Man May See.



Debbie Hoyt with new research faculty member Erik Ullian, PhD, and Marilyn Pratt, Board member of That Man May See, at the Annual Vision Awards Dinner.



Tom Bird, TMMS Board member from Napa, enjoys a chat with Dan Schwartz, MD, prior to the Annual Vision Awards Dinner.



That Man May See welcomes Netta Fedor as the new Development Associate, sighted at the offices of TMMS with Reggie Briggs, Awards and Research Manager.

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A facility of the UCSF Department of Ophthalmology

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Department of Ophthalmology

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