

2014
FOR SIGHT
Annual Report



SHILEY EYE CENTER
UC SAN DIEGO

SIMPLY WORLD CLASS

The UC San Diego Department of Ophthalmology at the Shiley Eye Center offers the most advanced treatments across all areas of eye care. Our world class clinicians, surgeons, scientists and staff are dedicated to excellence and providing the best possible patient care to prevent, treat and cure eye diseases. Our research is at the forefront of developing new methods for diagnosis and treatment of eye diseases and disorders. In addition to educating the leaders of tomorrow, we are committed to serving the San Diego and global community.



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A LETTER FROM OUR CHANCELLOR

PRADEEP K. KHOSLA, PH.D.

UC San Diego continues to rank among the top universities in the country and the world, and you play a big part in that. This year, our campus was listed as the 3rd best public university in the United States and the 20th best university in the world by the Center for the World University Rankings, which measures universities' quality of research, faculty, influence, enterprise and successful alumni. In addition, UC San Diego's Department of Ophthalmology ranked 4th in the nation for funding received by the National Institutes of Health. These rankings are a reflection of our talented campus members and generous supporters. It is because of you that UC San Diego and the Shiley Eye Center have grown and flourished over the decades.

Every day, we are improving and transforming the lives of people in our community, and around the world, through our mission of education, research and service. Faculty and researchers at the Shiley Eye Center are at the forefront of our innovative investigations that are leading to discoveries and benefitting our citizens. This year, the first known orbital reconstruction using 3D printing technology was conducted at the Shiley Eye Center, and additional treatment strategies are on the horizon across campus.

I thank you for supporting UC San Diego and the Shiley Eye Center as we continue to fulfill our mission to transform California and a diverse global society by educating, generating and disseminating knowledge and creative works, and engaging in public service.



With kind regards,

A handwritten signature of Pradeep K. Khosla in black ink.

Pradeep K. Khosla, Ph.D.
Chancellor
University of California, San Diego

A LETTER FROM OUR CHAIRMAN

ROBERT N. WEINREB, M.D.

Dear Colleagues, Alumni and Friends,

The past year has been one of outstanding accomplishments and dedicated service to our patients and community.

The Shiley Eye Center is raising the bar for innovation in several areas of ophthalmology with our strategies that include:

- Leveraging a multidisciplinary approach that integrates vision research, bioengineering, neurosciences, genetics and stem cell biology to treat, prevent and cure blindness.

Shiley Eye Center has been awarded a prestigious “K12 National Eye Institute Mentored Clinical Scientist” grant to train clinicians scientifically in a multi-disciplinary program utilizing many departments across the UC San Diego campus.

- Continuing to partner with outstanding groups in San Diego and throughout the world to translate research into better vision.

In 2013, we rose to #4 nationally of Departments of Ophthalmology in funding by the National Institutes of Health.

- Focusing our resources and energy on developing and growing clinical research programs that fill unmet needs.

Our new Visual Performance Laboratory and

driving simulator, under the direction of Felipe Medeiros, M.D., Ph.D., will show the effects of eye disease on everyday tasks such as driving but in a safe environment.

Eric Nudleman, M.D., Ph.D., a clinician-scientist who specializes in retinal vascular diseases and pediatric retinal diseases, has recently joined our team.

- Investing in state-of-the-art facilities, equipment and brainpower.

We were honored to receive a \$6.5 million donation from a grateful patient to establish the Richard C. Atkinson Laboratory for Regenerative Ophthalmology.

- Continuing to deliver the finest eye care to the residents of San Diego and beyond.

Advancing these strategies will require more resources including research laboratories, clinical research space and funding to promote the swift exchange of knowledge between the laboratory and clinic in order to bring transformative innovations to both physicians and patients.

Over the past year, the Department established two new endowed chairs which provide funds for the chair holders’ research and teaching.

One is named in memory of Donald P. Shiley. Mr. Shiley foresaw the bright future for the Shiley Eye Center. It is in his memory, and his vision, that we continue to do our best to provide unsurpassed eye care, vision research, education and community service.

On behalf of our Shiley Eye Center team, I thank you for your support and confidence.



A handwritten signature in black ink that reads "Robert N. Weinreb". The signature is fluid and cursive.

Robert N. Weinreb, M.D.
Chairman and Distinguished Professor
of Ophthalmology
Director, Shiley Eye Center
Director, Hamilton Glaucoma Center
Morris Gleich, M.D. Chair in Glaucoma

NEW LABORATORY FOR REGENERATIVE OPHTHALMOLOGY

(image) In vivo integration and differentiation of grafted hESC-derived (human embryonic stem cells) retinal stem cells (green) in the retina.



A \$6.5 million gift from a grateful patient will create the Richard C. Atkinson Laboratory for Regenerative Ophthalmology in the department of ophthalmology at the Shiley Eye Center. The new lab will investigate cell replacement therapies, tissue engineering and other biomedical advances to reverse vision loss and blindness.

“This significant gift will provide UC San Diego the foundation for innovation as researchers at the Shiley Eye Center employ a multi-disciplinary approach that integrates ophthalmology, vision research, bioengineering, neurosciences and stem cell biology,” said UC San Diego Chancellor Pradeep K. Khosla.

The donor named the laboratory in honor of Richard Atkinson, former University of California president and UC San Diego chancellor, for his lasting impact not only on UC San Diego, but on the entire UC system. A professor emeritus of cognitive science and psychology, Atkinson served as president of the UC system from 1995 to 2003. Before becoming president, he served for 15 years as chancellor of UC San Diego. He is a former director of the National Science Foundation.

Goals for the new Richard C. Atkinson Laboratory for Regenerative Ophthalmology include:

- Restoring vision and regenerating diseased tissue in glaucoma, macular degeneration and other eye diseases.
- Storing and archiving surgical tissues including adult stem cells.
- Integrating biomedical engineering approaches into vision therapies.

Many of the most difficult to treat eye diseases result from the loss of nerve cells, such as retinal ganglion cells in glaucoma and other types of cells such as photoreceptors in macular degeneration. Other problems that patients face with eye disease, from scarring to surgical healing, may be greatly improved by novel cell or tissue treatments. Cells derived from patients provide an unprecedented opportunity to uncover the underlying causes of eye disease and to test treatments on the way to human trials.

Overseeing the research activities at the new Richard C. Atkinson Laboratory for Regenerative Ophthalmology will be clinician, surgeon and scientist Robert N. Weinreb, M.D. He is Chairman and Distinguished Professor of Ophthalmology at UC San Diego and Director of the Shiley Eye Center. “This gift will enhance our vigorous engagement in discovery and translational research,” Weinreb said. “It reaffirms the UC San Diego Shiley Eye Center as a groundbreaking scientific and clinical hub, committed to improved treatments and the prevention and cure of blinding eye diseases in our community and around the world.”

For nearly 30 years, philanthropic support from generous individuals, foundations and corporations has provided the UC San Diego department of ophthalmology at the Shiley Eye Center with valuable resources for patient care, research, education and community service. With private support, the facility will continue to revolutionize eye care treatment and provide cutting edge medical therapy to all those afflicted with debilitating vision disorders.

DRIVING SIMULATOR TO EVALUATE EYE DISEASES' EFFECT ON DRIVER SAFETY

“The beauty is that we have an opportunity to train these drivers to overcome certain defects they have in their driving.”

FELIPE MEDEIROS, M.D., PH.D.

The University of California, San Diego, Shiley Eye Center is among the first ophthalmology departments in the nation with a dedicated, high-definition driving simulator for evaluating the safety of drivers with eye diseases, such as age related onset glaucoma. “The simulator can test for hazardous situations,” explains Felipe Medeiros, M.D., Ph.D., Professor of Ophthalmology, the Ben and Wanda Hildyard Chair for Diseases of the Eye, and Director of the Visual Performance Laboratory at the Hamilton Glaucoma Center.

The driving simulator testing is quite different from a routine DMV Driver's License visual test. Driving requires cognitive skills such as brain thinking, motor skills such as moving one's hands and feet, and complete attention to specific tasks while multi-tasking. Driving is a complex process that we all learn to do almost intuitively. “This is why our new simulator is so special,” Dr. Medeiros continues. “It enables us to provide different virtual environments so that the driver steers through a highly realistic test drive which provides 360-degree scenarios that are all moving. At the same time, instruments inside the vehicle monitor certain features of your driving. It

is 100% safe since it is similar to a virtual game, except that you are being carefully monitored even though you never realize it.”

The simulator is a video gamer's fantasy, with an entire room dedicated to recreating the driving experience. Drivers sit in a full-sized cabin of a Ford Fusion, mounted on a movement system, and look out onto a realistic cityscape with road and traffic that is projected onto the room's walls. The scenes interactively respond to the driver's steering, braking and accelerating. To recreate the feel of real driving, no detail has been spared -- even the car's three adjustable rear-view mirrors display images of what would be visible on the road. The car also pitches, rolls and rumbles in response to acceleration, braking and road roughness inputs.

“We know that standard eye exams - the charts that test pure visual acuity and even field of vision tests - do not give much information on whether a person is capable of driving,” says Dr. Medeiros, “the results from a driving simulator will give us a much better assessment of a person's ability to drive safely.” The simulator, for example, allows researchers to track a driver's adeptness to maintain lane position, follow behind another



(image) View behind the simulator's wheel.



car on a windy road, and avoid pedestrians crossing the street. “We can test people under conditions that would be extremely dangerous in real life,” he says, citing examples such as night driving or driving in rain. The first set of patients to get behind the wheel of the simulator will be those who are already part of an ongoing, long-term National Institutes of Health (NIH) study on eye disease, which is tracking eye health in more than 300 volunteer participants.

Dr. Medeiros and his team recently published the results of a NIH funded 3-year study of these volunteers who were tested on an earlier version simulator with some remarkable results. For instance, they reported that an important skill in driving is the ability to allocate one’s attention appropriately. The study demonstrated that subjects with the slowest ability to allocate their attention actually had the higher crash history (as recorded at the Department of Motor Vehicles). “The beauty is that we have an opportunity to train these drivers to overcome certain defects they have in their driving. So, on the one hand we can evaluate disease and pinpoint risk or no risk, but also, on the other hand our brain is so remarkable it can often compensate for defects – thereby opening up entirely new customized training regimens on the simulator to be able to train the brain to make driving safer.”

“Dr. Medeiros’ research is groundbreaking and transformative. It will directly affect and improve the everyday lives of our patients,” said Robert N. Weinreb, M.D., Chairman and Distinguished Professor of Ophthalmology.

Besides developing metrics of driving fitness, Dr. Medeiros and his colleagues hope to train people to develop skills in an effort to compensate for the losses associated with eye disease or aging. For example, people who have lost peripheral vision due to glaucoma, the leading cause of irreversible blindness in the United States, may be able to learn to turn their head more often while driving to gain back some of their field of vision loss. “People with glaucoma may be at higher risk of being in a traffic accident, and they may not know it because so many people’s glaucoma is undiagnosed,” cautioned Dr. Medeiros.

(above) The room where the driving simulator is located with surrounding graphics.

(right) Felipe A. Medeiros, M.D., Ph.D. next to the full size car/driving simulator.





(left to right) Linda Zangwill, Ph.D., Natalie Afshari, M.D., Shira Robbins, M.D., Radha Ayyagari, Ph.D.

Among the clinical and research faculty members, scientists, technicians, managers and assistants, one-half of the UC San Diego Shiley Eye Center's employees are women, all of who help lead the growth of the Shiley complex.

Faculty member, Linda Zangwill, Ph.D., has been with UC San Diego since 1993 and is Professor of Ophthalmology, Co-Director of Clinical Research at the Hamilton Glaucoma Center, and a world acclaimed scientific researcher on glaucoma and other vision related eye diseases. Scientifically, Dr. Zangwill is particularly interested in the relationship between the structure and function of the optic nerve in glaucoma, but also is personally committed to actively participating in several committees that study and highlight the role of women on campus. She has co-chaired the Chancellor's Advisory Committee on the Status of Women and the UC San Diego Women in Science and Engineering to promote the recruitment, retention and

advancement of women in Science. In addition, she actively participated in the UC San Diego Women's Leadership Alliance.

"I was inspired to study medicine by my mother's unflagging support. I have been blessed to have a Chair like Dr. Weinreb who so strongly supports clinical scientists/physicians like me," says Natalie Afshari, M.D., Professor of Ophthalmology, Chief of the Division of Cornea and Refractive Surgery and Director of Education for the Shiley Eye Center. Dr. Afshari is no stranger to success. She has traced a meteoric pathway with her studies at UC Berkley, Stanford, Harvard and Duke before joining the Shiley faculty in 2012. Immediately upon her appointment, she implanted an artificial cornea, a very uncommon surgery, restoring vision to a patient who had been blind for decades.

Shira Robbins, M.D., Associate Clinical Professor of Ophthalmology, feels that a female academic physician needs to be flexible in order to successfully balance a career and family. "As a Pediatric Ophthalmologist, I save children's vision every day and each child I help gives me such a sense of fulfillment. In addition, I have the daily joy of my own two children. Being a part of their experiences has been life changing." Dr. Robbins goes on to point out that her colleagues at Shiley have been tremendously supportive of her career as she develops new training programs for enhancing physician communication with patients and continues her research on diseases effecting premature infants. She notes that there are many configurations of families and professions that are becoming more common and gender equal in our society.

Associate Professor of Ophthalmology and Director of the Ocular BioBank, Radha Ayyagari, Ph.D., has been focused on providing genetic counseling to patients in clinical trials and to children at risk of development to the eye. "I look at the genetic sequences underlying an eye disease and try to



(left)

Karen Anisko Ryan, M.S. is Shiley's Director of Business Development and Communications including Shiley's special events.

"I enjoy helping patients and also connecting them with Shiley's remarkable clinicians and scientists."

KAREN ANISKO RYAN, M.S.

determine what is the functional abnormality the defect causes at a cellular level. It is like solving a puzzle as we put the various pieces together to understand how the eye works and what the correlation is with the disease.” Dr. Ayyagari’s research is focused on inherited retinal degenerative diseases and she collaborates with Dr. Weinreb on glaucoma genetics.

A common theme among these outstanding faculty members is their belief that the Shiley Eye Center feels like a “second home”. Each of them has her own set of goals and hopes to impact patient care and research. What is certain, beyond these four remarkable women, is that each and every one of Shiley’s staff play a vital role in the Shiley Eye Center’s ability to provide outstanding patient care, educate residents and fellows, research eye diseases and positively impact not just the local but also our global community. The entire Shiley Eye Center family is proud of their impact on the department.

“There is a saying that your profession usually is something you love doing, and my mother tells me that at age five, I loved putting eye drops into my grandfather’s eyes. Now, I look at eyes all day, and there is a unique personality behind each set. Who knew?”

PAMELA HOO, O.D.

“Over the 10 years I’ve spent at Shiley, my goal has been to help facilitate a better form of communication between patient and staff.”

LESLEY TAYLOR

“I think the best part for me is to spend time cross training and participating in the cutting edge clinical trials going on in the research group. All my patients are like family to me.”

EUNICE WILLIAMS-STEPPE



(left to right)

Surgery Staff:
Maria Pulido, RN, Clinical Nurse; Kathy Thompson, MSN, MBA, RN, CNOR, Director of Pre-Op Services; Maria Camilon, RN, MSN, CNOR, Nurse Manager



(left to right)

Optometrists:
Jessica Tasto, O.D., Lianne Mizoguchi, O.D., Esmeralda McClean, O.D., Anne Ho, O.D., Pamela Hoo, O.D., Lara Hustana, O.D. have an important role in providing for the vision care need of the Shiley Eye Center patients.



(left to right)

Clinical Supervisors:
Lesley Taylor, Patient Services Supervisor; Aida Sosa, Medical Records Supervisor; Elham Antar, Front Desk Clinic Manager; and Aida Haile, Hospital Lab Tech Supervisor.



(left to right)

Staff Research Associates:
Joy McDonald, Tess Acera, Eunice Williams-Steppe and Veronica Rubio, Glaucoma Research Coordinator all have vital roles for the clinical research conducted at the Shiley Eye Center.

A close-up photograph of a 3D printer's nozzle printing a white, porous, and irregularly shaped object, which is a customized orbital model. The printer's frame and internal components are visible in the background, with some parts illuminated by blue and red lights.

THE POWER OF 3-D

ORBITAL FACIAL RECONSTRUCTION USING 3D BIO PRINTING TECHNOLOGY

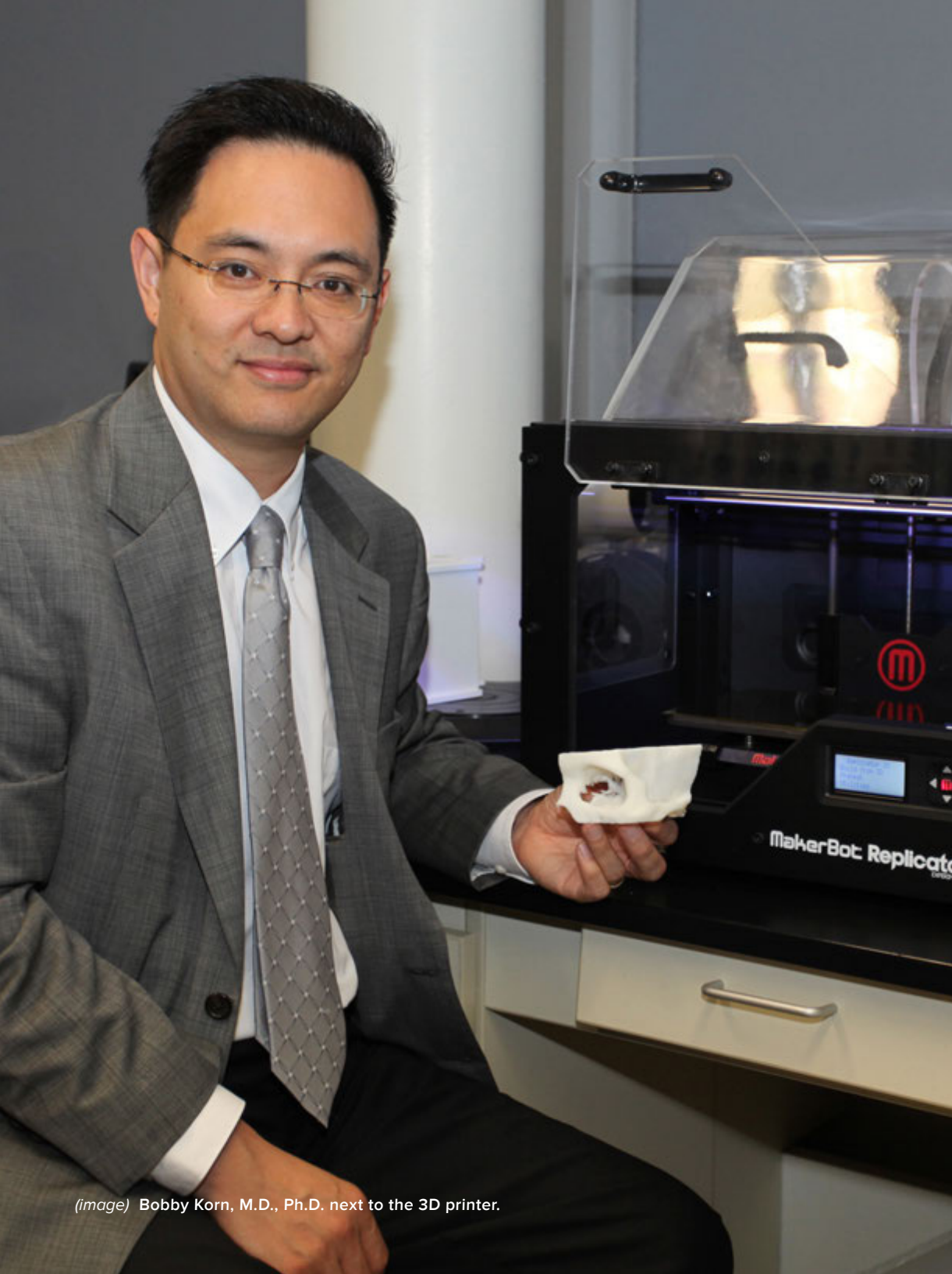
“I saw the angel in the marble and
carved until I set him free.”

MICHELANGELO

Oculofacial expert Bobby Korn, M.D., Ph.D., Associate Professor of Clinical Ophthalmology in the Division of Ophthalmic Plastic and Reconstructive Surgery, recognized the challenging task of rebuilding a patient's face after removing a massive tumor under his cheek and was going to need some 21st century assistance. The surgical removal required that all underlying bone under the eye socket, as well as the surrounding sinus, had to be excised out to leave behind an eye with no support and a gaping hole under it. Though the prognosis after tumor removal was excellent, and the patient could expect to live a long life, the options of reconstruction were very limited.

Eventually, Dr. Korn and the Shiley team decided to customize a scaffold that would be

(image) Customized 3D printed orbital
model used for surgical reconstruction.



(image) Bobby Korn, M.D., Ph.D. next to the 3D printer.

a replacement support to hold the eye in place and provide a rigid framework under the cheek by using a new and novel technology known as “3D Bio Printing.” They created a three dimensional software generated replica of the eye orbit derived from CT scans of the patient and then used this to 3D Bio Print a rigid mold to serve as a template to fabricate the new eye socket. A commercially available biodegradable implant was then fabricated right on the surgical field using this 3D Bio Print. “The implant was successful and within three months the patient regained functional eye activity and cosmesis, to bring back a smile in his face and a twinkle to his eyes,” said Dr. Korn.

Unlike traditional machining that can create objects by cutting material away, 3D Bio Printing, also known as “additive manufacturing” is a bottom-up technology paradigm that builds structures by layering many thin layers on top of each other. Researchers can place components of interest in the “bio ink” used for 3D Bio Printing such that different components can be added to a computer generated scaffold design to mimic a bioactive “tissue”. Since the 1980’s, the invention of 3D printing has been adapted to manufacture a widening array of commercial and medical related products ranging from aircraft parts to prosthetic limbs.

The Shiley team’s renowned eye-care reputation has achieved another first in the world by utilizing 3D Bio printing to perform this delicate eye orbital reconstruction. The use of appropriate bio components (stem cells, islet cells, tissue scaffolding components, etc.) at the predetermined locations in the newly placed layers of the 3D Bio Printer will one day allow for the creation of living, biologically active implants, tissues or other biological replacement structures. “The exciting future promises of this technology is the ability to use a patient’s own cells as constituents of the “bio ink” to develop individualized, customized replacement implants, organs or to print tiny strips of organs – and then transplant that into a damaged or diseased organ,” explains Dr. Korn, “as we enter into the era of personalized medicine where therapies and treatments are tailor-made for specific individuals.”

Don O. Kikkawa, M.D., Chief of the Division of Ophthalmic Plastic and Reconstructive Surgery stated, “We recruited Dr. Korn to join our division based on his research and interest in stem cells. His innovative ideas paired with 3D printing technology have the potential to revolutionize orbital reconstruction.”

A full-length portrait of Dr. Eric Nudleman, a man with curly brown hair, wearing a dark blue suit, white shirt, and a patterned tie. He is standing outdoors with a blurred background of greenery and a building.

SHILEY EYE CENTER WELCOMES ERIC NUDLEMAN, M.D, PH.D.

The UC San Diego Shiley Eye Center welcomes retina specialist and physician scientist Eric Nudleman, M.D., Ph.D. The newly appointed Assistant Professor of Ophthalmology moved from Royal Oak, Michigan where he completed a prestigious fellowship in vitreoretinal surgery with Associated Retinal Consultants / William Beaumont Hospital. His primary clinical interests are in pediatric and adult vitreoretinal diseases.

Dr. Nudleman received a Ph.D. from Stanford University in Developmental Biology. Working in the lab of Dale Kaiser, Ph.D., Dr. Nudleman studied *Myxococcus xanthus*, a primitive model of multicellular development. His work identified a cell surface signaling protein that is transferred between cells by direct cell-to-cell contact, a unique mechanism in bacteria. His findings were published in *Science*, and led to the discovery of many other similar molecules that are important in the formation of bacterial biofilms.

Dr. Nudleman's interest in developmental biology early in his academic career propelled him to pursue his medical degree, ultimately leading to ophthalmology. He earned his M.D. at Albert Einstein College of Medicine of Yeshiva University in New York and completed his residency at

Washington University School of Medicine in St. Louis, Missouri. He then chose to focus on the retina, the tissue that lines the back of the eye. His background led him to a specific interest in pediatric vitreoretinal diseases, which he pursued while training with the world's leaders in the field at the William Beaumont Hospital.

Over the course of his studies, Dr. Nudleman was awarded several honors such as the Ronald G. Michels Fellowship, Heed Fellowship, the Doris P. and Harry I. Wexler Prize, Rosenbaum Research Award, and the Association of University Professors of Ophthalmology/Research to Prevent Blindness Resident and Fellow Research Forum Award. He has also participated in multiple National Eye Institute and industry sponsored clinical trials.

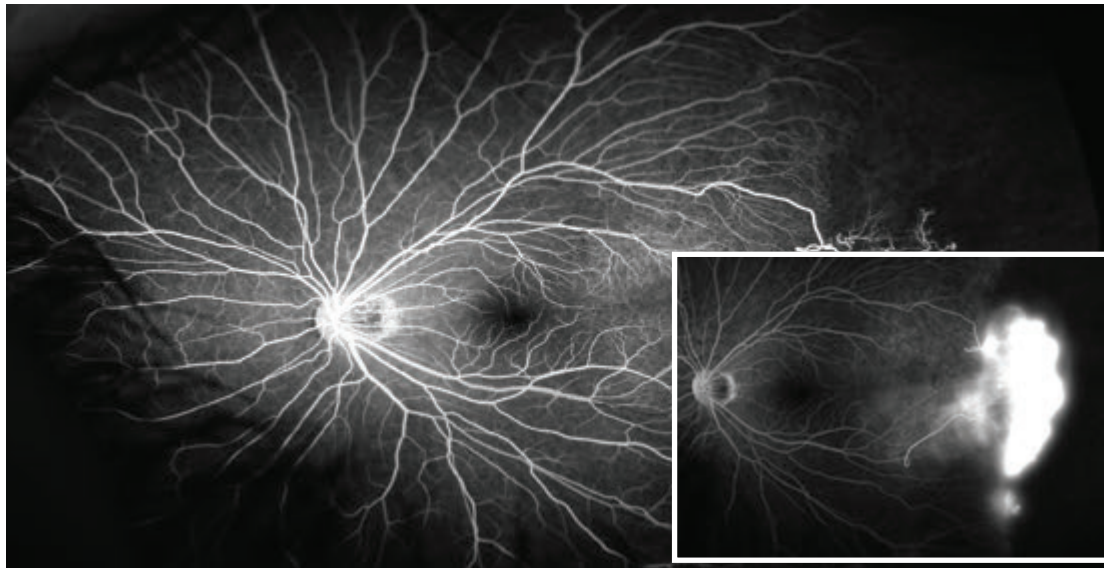
Dr. Nudleman plans to focus his research on better understanding the fundamentals of blood vessel growth. He is interested in several conditions that affect the development of normal retinal blood vessels in children. In Retinopathy of Prematurity (ROP), for example, abnormal blood vessel growth can occur in severely premature infants and can, at its worst, cause a completely detached retina. In severe cases, Dr. Nudleman must surgically intervene to curtail the degeneration and subsequent loss of vision.

"I find the greatest sense of fulfillment when I help to prevent blindness in a child. It's a privilege to play that role - to be able to preserve their vision for the rest of their lives," says Dr. Nudleman, the father of three children.

With Dr. Nudleman's attention on how blood vessels form, he hopes to translate his work towards adult vitreoretinal diseases that are affected by aberrant blood vessel growth. These include common diseases such as macular degeneration, diabetic retinopathy and retinal vein occlusions.

Dr. Nudleman plans to collaborate with other research laboratories focusing on angiogenesis (formation of new blood vessels). He will be pursuing a genetic approach with particular attention towards the role of the Wnt signaling pathway, a key developmental pathway known to be involved in angiogenesis. His research interests will complement those of Napoleone Ferrara, M.D., Distinguished Professor of Ophthalmology at UC San Diego. He hopes his work will identify novel targets to treat a broad range of vascular diseases.

"Dr. Nudleman's outstanding clinical and surgical skills, as well as his innovative research, will enhance the ability of our outstanding retina team to rescue and restore vision in those with retinal diseases such as macular degeneration and diabetic retinopathy," according to Robert N. Weinreb, M.D., Distinguished Professor and Chair of the Department of Ophthalmology.



(above) Widefield fluorescein angiography of a patient with Familial Exudative Vitreoretinopathy (FEVR), demonstrating peripheral avascular retina with temporal dragging of vessels and adjacent neovascularization.

(bottom right inset) Late frame showing leakage.

FERRARA RECEIVES CHAMPALIMAUD AWARD FOR ROLE IN EYE DISEASE THERAPY



Napoleone Ferrara, M.D., Distinguished Professor of Ophthalmology at the UC San Diego School of Medicine, was named as one of seven recipients of the António Champalimaud Vision Award in Lisbon, Portugal.

The 2014 António Champalimaud Vision Award was bestowed for the development of anti-angiogenic

therapy for retinal disease. Anti-angiogenic therapy is used to treat age-related macular degeneration and diabetic retinopathy, which are the leading causes of blindness in high- and middle-income countries.

Ferrara was recognized for the discovery of vascular endothelial growth factor (VEGF), for exposing the role of this molecule in promoting angiogenesis (the formation of new blood vessels), and his co-discovery of the role of VEGF in retinal disease and the development of the monoclonal antibody drug ranibizumab (marketed as Lucentis), which treats wet age-related macular degeneration, diabetic eye disease and other related disorders.

The award, presented by the Champalimaud Foundation, is given alternately between contributions to overall vision research (even numbered years) and contributions to the alleviation of visual problems, primarily in developing countries (odd numbered years). The honor comes with a \$1.3 million prize, the largest such award given in vision and ophthalmology research. It will be shared among the seven recipients.

Earlier this year, Ferrara was one of eight recipients of the Canada Gairdner Awards, among the most esteemed honors in medical research, for his work identifying the role of VEGF. In 2013, Ferrara was named one of 11 recipients of the inaugural Breakthrough Prize in Life Sciences. He has also won numerous other awards, including the Lasker-DeBakey Clinical Medical Research Award (2010) and The Economist's Innovation Award for bioscience in 2012.

SHILEY RECEIVES K12 NIH GRANT

The Department of Ophthalmology has been awarded a prestigious K12 “National Eye Institute (NEI) Mentored Clinical Scientist at the Development Program Award (K12)”, one of only several in the country.

Under the direction of Robert N. Weinreb, M.D. (Principal Investigator), Distinguished Professor of Ophthalmology and Director, Shiley Eye Center, this NEI mentored clinical scientist development program provides funding for scientific training of outstanding faculty ophthalmologists. Each K12 Scholar will spend up to 3 years in multi-disciplinary research training which will include didactic instruction

and research experience with a lead mentor and faculty from one or more area-of-interest mentorship teams. In basic and/or clinical sciences, K12 enrolled scholars will be selected each year after their completion of a post-residency clinical fellowship in ophthalmology. The mentoring groups are intentionally clustered according to multidisciplinary scientific investigative areas: (1) Visual Neuroscience, (2) Genomics and Proteomics, (3) Bioengineering, (4) Stem cell biology, (5) Computational Ophthalmology (and Telemedicine), and (6) Clinical (human subjects) Research.

With 31 faculty, the Department ranks first in the nation in NEI research funding per faculty member. UCSD Ophthalmology has rapidly increased its competitive awards from the National Eye Institute and in 2013 ranked #4 nationally (Blue Ridge Institute for Medical Research) with \$8.6 million in NEI funding.

Dr. Weinreb is assisted in oversight of this prestigious award by an executive team that includes Jeffrey Goldberg, M.D., Ph.D., Professor and Natalie Afshari, M.D., Professor. Linda Zangwill, Ph.D., Professor and Director of the Departmental Core Laboratories, also has a leadership role. In addition to Shiley Eye Center faculty, scientists from other UCSD departments and other major La Jolla institutions including the Salk Institute, the Sanford-Burnham Institute, J. Craig Venter Institute and the Scripps Research Institute (TSRI) will serve on mentoring teams for the K12 Ophthalmology Program.

“The exciting and vibrant scientific community at UCSD provides a unique environment for young scientists to develop outstanding research programs,” said Dr. Goldberg. UC San Diego has a long and successful track record in providing multi-institutional and multidisciplinary opportunities for pre-doctoral and post-doctoral (M.D., Ph.D., and M.D./Ph.D.) trainees.

The vision research community at UCSD and partnering institutions is among the most diverse in the country. There already is strong external research funding and considerable experience with training clinician scientists and scientists. In addition, the K12 program will facilitate further integration of vision research activities throughout our La Jolla community. “Translational vision research is among the highest priorities for the Department of Ophthalmology and the Shiley Eye Center, and the faculty is deeply committed to developing the next generation of outstanding clinician scientists,” according to Dr. Weinreb.



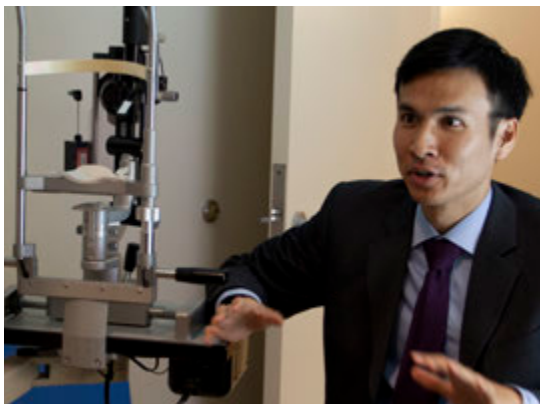
TELE-OPHTHALMOLOGY

AN INTELLIGENT PORTAL TO WELL-BEING

Shiley Eye Center physicians have begun an ambitious project to initiate and support the much needed transformation from reactive, hospital-centered capabilities to evidence based, patient-centered services through a Tele-Ophthalmology program. The program was initiated at the San Diego Veterans Affairs Hospital located on the UC San Diego campus. "Tele-Ophthalmology," explains Jeffrey Lee, M.D., Assistant Professor of Ophthalmology and Residency Program Director, "enables image based ophthalmological examinations to be performed remotely."

It is expected that patients throughout the country will have access to Shiley Eye Center clinicians and their expertise through the digital network for initial consultations and screenings. "Every subspecialty here at Shiley has a profound opportunity to reach the greater population," Dr. Lee continues.

The aging population and the prevalence of chronic diseases, especially several neurodegenerative diseases and those leading to vision loss (due to disease or age), are putting an ever increasing burden on the nation's healthcare system, as well as widening the gap between the number of healthcare professional caregivers and the quality of available medical care. Ophthalmological diagnosis relies heavily on visual imaging information. The ability to store, transmit, and query high quality digital data will



(above) Jeffrey Lee, M.D., Assistant Professor of Ophthalmology and Residency Program Director during an exam.

be an essential tool for ocular diagnosis and management. Currently, the Tele-Ophthalmology group has begun its pilot studies using high definition cameras for remote viewing and data transmission.

One critical issue that Dr. Lee and his team are beginning to tackle is the understanding that all relevant information pertaining to any individual, at any point of care, located anywhere in the world, at any time will need to be available to all the care team members. Recently, they used the newly placed Tele-Ophthalmology module to enable doctors to analyze, discuss and set up management of a Las Vegas patient's sinus tumor that was invading the orbit. As a result, the patient's care was expedited by several weeks and the patient was able to undergo surgery almost immediately because the necessary information was obtained through the virtual exam.

Dr. Lee states, "I believe that the advent of increasing access to data that can be sent over the network allows telemedicine to empower the patient to easily participate in his or her own care, and allows the individual an opportunity to obtain the finest care from the best physicians possible."

According to Robert N. Weinreb, M.D., Director and Chairman of the Shiley Eye Center, "tele-ophthalmology conserves resources and saves time. It is likely to deliver care more efficiently and most importantly improve patient care. This type of patient-centered approach will enable us to reach out directly into the home, workplace and community in a far more effective manner."



UC SAN DIEGO RESEARCH COLLABORATION

(image) Transplanted hematopoietic stem cells observed in the spleen of the mice affected with cystinosis.

The Shiley Eye Center faculty maintains active collaborations with many colleagues across the UC San Diego campus and the surrounding institutions. For example, Jeffrey Goldberg, M.D., Ph.D., Professor of Ophthalmology and Director of Research at Shiley Eye Center, recently initiated a collaboration with Stephanie Cherqui, Ph.D., Assistant Professor of Pediatrics in the UC San Diego Biomedical Sciences Graduate Program, to study the impact of stem-cell based therapy on the eye in cystinosis.

Cystinosis is an inherited disease whereby one of the body's amino acids known as cystine gets stuck inside the cell's waste disposal system (lysosomes), forms crystals and damages the cells leading to multi organ failure, in particular of the eye and kidney. Dr. Cherqui, one of the world leaders in the study of the pathogenesis and treatment of this disease, has been studying a preclinical animal model of cystinosis that leads to crystals getting deposited in all the tissues including the cornea, just as happens in humans, where it leads to a profound loss of vision. She has developed a stem cell based therapy to correct the defect in the laboratory. This is where



(left to right) Jeffrey Goldberg, M.D., Ph.D. and Stephanie Cherqui, Ph.D.

Dr. Cherqui brought in the expertise of Dr. Goldberg, a leader in regenerative medicine and stem cell therapies, to assess the corneas and visual potential in a preclinical trial. Results are promising and as a result, they were recently funded by the NIH to extend this science to other diseases.

"It is a pleasure to collaborate with a world leader in cystinosis research right here at UC San Diego," Dr. Goldberg said. "I have great confidence that Dr. Cherqui's research will move into human testing, and knowing what a difference this could make for patients' vision, the faculty and staff at Shiley Eye Center are excited to help her bring her research forward."

Dr. Cherqui's laboratory focuses on developing stem cell and gene therapy strategies for degenerative multi-organ disorders such as cystinosis, and to understand the mechanisms by which hematopoietic stem cells (stem cells that form blood cells) could lead to tissue repair. In the mouse model of cystinosis, she showed that these cells engrafted abundantly in the injured tissues and led to long-term tissue preservation. Her goal is to develop this stem cell gene therapy strategy for gene-modifying the patients' own stem cells for an autologous transplantation. They are now conducting the toxicology studies required by the Food and Drug Administration (FDA) for a phase I clinical trial for cystinosis.

NEUROIMAGING TECHNIQUES FOR LISTENING TO THE BRAIN



(image) Peter J. Savino, M.D.

fluctuations (bio-magnetism). MEG, unlike MRI, functional MRI, PET or SPECT scanning measure brain metabolism, measures the magnetic field associated with a moving electrical impulse. The spatial distributions of the magnetic fields are analyzed to localize the sources of the activity within the brain and the locations of the sources are superimposed on an anatomical brain map. Events with time scales on the order of milliseconds can be resolved and can be localized to within a millimeter.

The patient's MEG revealed alteration of the electrical signal on each side of the brain to account for his homonymous visual field defects, and thus established that the abnormalities were real and that the patient was not faking the symptoms. Moreover, they were confirmed with another test, diffusion tensor imaging (DTI) that measures the diffusion of water in brain tissue. The pattern of the abnormalities on DTI likewise were in the areas of the MEG abnormalities. With these results, Dr. Savino then advised the patient that the defects would not worsen but not improve, and he was counseled to retire from boxing.

Dr. Savino is an original member of the Optic Neuritis Treatment Trial and has published extensively on optic neuritis and other disorders of the optic nerve. He wrote two important textbooks on Neuro-ophthalmology that are utilized worldwide by ophthalmologists and he has been recognized with prestigious awards including the Heed Foundation Award and the Lifetime Achievement Award from the American Academy of Ophthalmology. Dr. Savino also is a dedicated teacher. He has been voted Best Teacher of the Year by Ophthalmology residents in four different decades.

It is amazing that 40% of the nerve fibers in the human brain help carry visual information. As a result, damage to the brain often causes loss of peripheral vision in both eyes to the side opposite the brain lesion. These visual defects are known as homonymous visual field defects, and are almost always detectable on MRI (magnetic resonance imaging) scanning.

Peter J. Savino, M.D., Clinical Professor of Ophthalmology and Neurosciences at the Shiley Eye Center, examined a 34-year-old professional boxer with blurred vision and bilateral homonymous visual field loss. The patient, who had previously been examined elsewhere, had "checkerboard" visual field abnormalities. Such abnormalities are typically caused by bilateral occipital lobe (the back region of the brain) lesions. However, three MRI scans were normal and therefore, the patient was diagnosed as "pretending" to have the defect by the other doctors. Dr. Savino considered the boxer's defects to be real, but in order to be sure he needed to demonstrate that damage to the specific areas of the brain could produce the visual loss.

One of the two techniques Dr. Savino employed was magnetoencephalography (MEG), a precise, noninvasive technology of measuring brain activity through the detection of the tiny magnetic



(image) Whole-head Magnetoencephalography (MEG) System



UNBLINDED LOVE

Kimball Woodbury, an American soldier stationed in Korea, became accustomed to local cuisine and frequented a restaurant where he met Ok Son, a young woman working as a server. Five years after meeting, the couple married at a local US Embassy. Kimball, who served in Vietnam for thirty-two months, retired after giving more than twenty years to his country and returned home to his wife and two children, Anthony and Angela.

The Woodburys lived happily in Las Vegas until 1998 when Kimball was tragically diagnosed with an advanced form of basal cell carcinoma involving his face and eyes. The local VA transferred him to the VA Medical Center of San Diego where his care was supervised by Don O. Kikkawa, M.D. Vice Chair, Professor and Chief of the UC San Diego (UCSD) Division of Oculofacial Plastic and Reconstructive Surgery at the Shiley Eye Center.

The first step of Kimball's treatment was to completely excise the cancer to prevent it from spreading to vital structures and save Kimball's life. Unfortunately, the cancer was so advanced, Kimball lost all four eyelids and over half of his face. The next step was to protect Kimball's vision. Dr. Kikkawa succeeded, but was faced with the difficult task of preserving the useful vision in

(image) Kimball Woodbury and wife, Ok Son Woodbury

“It was an awakening for me to be able to finally see my wife again.”

KIMBALL WOODBURY

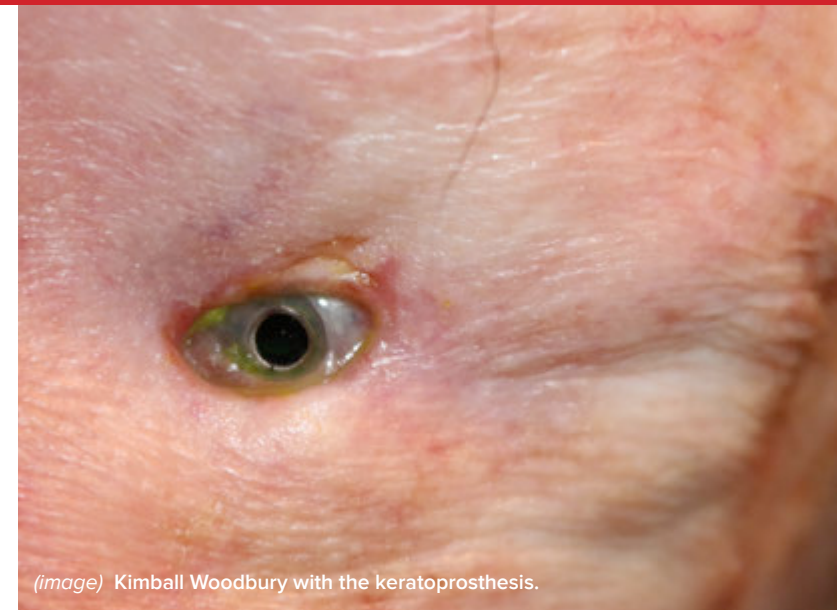
Kimball's right eye and then deciding to cover up his left eye, which was more severely damaged by the skin cancer. “We kept Kimball's left eye protected as a ‘spare tire’ in case it was needed later,” Kikkawa remarks about the earlier surgery. Kimball lived with one healthy eye until tragedy struck again fourteen years later and the cancer returned forcing Kimball to lose his functioning good eye to a tumor.

Rendered completely blind for nearly three years and dependent on his wife and son, Anthony, for everything, Kimball had faith that he would someday see. Sadly during this time, Ok Son was diagnosed with breast cancer that spread to her brain and a heart attack. As family misfortune continued to mount, Kimball and Ok Son persevered by finding strength in one another to combat their health battles.

Seeking a solution, Dr. Kikkawa consulted Natalie Afshari, M.D., Professor and Chief of Cornea and Refractive Surgery. Dr. Afshari performed a transformative procedure known as keratoprostheses in which she attached a specialized, handcrafted, custom artificial corneal implant, which would “jump start” the eye. Together Drs. Afshari and Kikkawa reconstructed Kimball's dormant left eye. “The success of this operation would not have been possible if not for Dr. Afshari's expertise and surgical innovation in restoring Kimball's vision,” states Dr. Kikkawa.

“It was an awakening for me to be able to finally see my wife again,” Kimball says. “I am so glad and lucky that Dr. Kikkawa stuck with me through all these years of struggle.” He and Ok Son are extremely grateful for Dr. Kikkawa's longtime dedication to him and his family. Kimball feels that his restoration of vision was nothing short of a miracle and praises Drs. Afshari and Kikkawa.

Today Kimball boasts a big smile as his life has changed dramatically since his first surgery fourteen years ago. He can now see his lovely wife, their children and his grandkids too. Kimball can read his mail, walk unassisted, and even occasionally visits the casinos on his own. “God is on our side!” Kimball says gratefully, also remarking “the Shiley doctors pulled out a great miracle for me!”



(image) Kimball Woodbury with the keratoprosthesis.



(left to right) Natalie A. Afshari, M.D. and Don O. Kikkawa, M.D. in the surgical suite at the Shiley Eye Center.



DEPARTMENT OF OPHTHALMOLOGY



GLAUCOMA

Glaucoma can cause blindness if untreated and is the second leading cause of blindness in the United States. More than 3 million Americans have glaucoma and at least one half do not know it. Although there is no cure yet, loss of vision can be slowed or halted with medical and/or surgical treatment. The best way to protect your sight from glaucoma is to get tested. Early diagnosis and appropriate treatment are the keys to preserving vision.

The UC San Diego Hamilton Glaucoma Center offers comprehensive and unparalleled glaucoma diagnostic services with unique instrumentation that is not yet available anywhere else. In addition to standard optic nerve imaging and functional testing, specialized programs are available including continuous measurement of 24 hour intraocular pressure, a dedicated sleep unit for glaucoma testing, anterior segment imaging, a dedicated visual performance laboratory, objective perimetry with pupillometry, swept source OCT for imaging of the lamina cribosa and choroid, OCT angiography, as well as a visual performance laboratory with a driving simulator.

Our glaucoma specialists are world renowned for their clinical and research excellence and offer unique management programs for glaucoma through clinical trials and innovative medical and surgical therapies that include genetic testing and regenerative ophthalmology.



Robert N. Weinreb, M.D.

Chairman & Distinguished Professor of Ophthalmology
Distinguished Professor of Bioengineering
Director, Shiley Eye Center
Director, Hamilton Glaucoma Center
Morris Gleich, M.D. Chair of Glaucoma

Medical School

Harvard Medical School

Residency

University of California, San Francisco

Fellowship

University of California, San Francisco

Certification

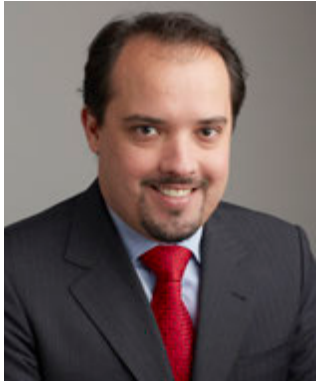
Board Certification in Ophthalmology

Special Interests

Glaucoma surgery; The aging eye; Imaging of optic disc and nerve fiber layer; Neuroprotection in glaucoma; Drug delivery; Cataract surgery

Notables

2013, 2014 US News and World report Top Doctors (Top 1%). 2013, 2014 Cited in Woodward/White Best Doctors in American. 2014 Honorary Professor, Chinese University of Hong Kong; 2014 Advisory Board, State Key Laboratory in Ophthalmology. Sun Yat-Sen University, Guangzhou; 2014 President Pan American Glaucoma Society; 2013 Innovators Award, American Glaucoma Society; Visiting Professor, Huazhong University of Science and Technology, Wuhan, China (2013-2016); 2012-2014 President, American Glaucoma Society Foundation; 2013 Honorary Member, Societe Francaise D'Ophthalmologie; Heed Ophthalmic Foundation Award; Past-President, Association for Research in Vision and Ophthalmology; Past-President, World Glaucoma Association; Inaugural ARVO Gold Metal; Ridley Medal; Past-President American Glaucoma Society; Adjunct Professor, Chinese University of Hong Kong; Moeyr E Alvaro Medal; Ronald Lowe Medal; World Glaucoma Association Founders Award, Leydheck-Harms Medal; Lifetime Achievement Award American Academy of Ophthalmology; Watson Medal of Cambridge University; Asia Pacific Glaucoma Society International Award



Felipe A. Medeiros, M.D., Ph.D.

Professor of Clinical Ophthalmology
Medical Director & Director,
Visual Function Research
Fellowship Program Director, Hamilton
Glaucoma Center
Ben and Wanda Hildyard Chair for
Diseases of the Eye

Medical School & Residency

University of Sao Paulo

Fellowship

University of California, San Diego

Certification

Board Certification in Ophthalmology

Special Interests

Management of challenging glaucoma cases and new surgical procedures; Cataract surgery; Advanced imaging analysis for diagnosis and detection of glaucoma progression; New techniques for intraocular pressure measurement; Functional impairment in glaucoma; Prediction models and risk assessment in glaucoma

Notables

2014 Qualcomm Institute Strategic Research Award; 2013 Ben and Wanda Hildyard Chair for Diseases of the Eye; 2013 Top 5 Glaucoma Researchers of the Decade (Expertscape); 2013 Best Doctors in America; 2013 Rich Lecturer, University of Alabama at Birmingham; 2013 South African Glaucoma Society Honorary Member; 2012 Iranian Society of Ophthalmology Recognition Award; 2012 Federal University of Sao Paulo Special Recognition Award; 2012 American Academy of Ophthalmology (AAO) Glaucoma Subspecialty Day Planning Group; 2012 Member of the AAO BSCS Committee; 2012 Member of the Research Committee, American Glaucoma Society; Ronald Lowe Medal; American Glaucoma Society Mid-Career and Clinician Scientist Awards; Achievement Award American Academy of Ophthalmology; World Health Organization (WHO) Committee for Prevention of Glaucoma Blindness;



Linda Zangwill, Ph.D.

Professor of Ophthalmology in Residence
Co-Director of Clinical Research,
Hamilton Glaucoma Center
Director, Hamilton Glaucoma Center,
Data Coordinating Center

Graduate School

Harvard School of Public Health (M.S.)
Ben-Gurion University of the Negev (Ph.D.)

Postdoctoral Fellowship

University of Waterloo, Waterloo, Ontario, Canada

Special Interests

To improve our understanding of the complex relationship between structural and functional change over time in the aging and glaucoma eye. To develop computational and statistical techniques to improve glaucomatous change detection, reduce the number of visits and optimize the type of testing required to identify risk factors that can predict glaucomatous progression and rapidly progressing glaucoma

Notables

2013 "Women Who Mean Business" Award from the San Diego Business Journal; Glaucoma Research Society (elected member); Achievement Award American Academy of Ophthalmology; Association for Research in Vision and Ophthalmology Silver Fellow; Glaucoma Societies; Achievement Award American Academy of Ophthalmology; Association for Research in Vision and Ophthalmology Silver Fellow



Jeffrey L. Goldberg, M.D., Ph.D.

Professor of Ophthalmology
Director of Research, Shiley Eye Center

Medical School

Stanford Medical School

Residency

Bascom Palmer Eye Institute

Fellowship

Bascom Palmer Eye Institute

Certification

Board Certification in Ophthalmology

Special Interests

Glaucoma surgery; Cataract surgery;
Neuroprotection and regenerative ophthalmology;
Stem cell and tissue engineering; Nanotechnology

Notables

2013 University of Illinois Chicago, Cless "Best of the Best" Award; 2012 ARVO Cogan Award; 2010 Hope for Vision Scientist of the Year; Election to American Society for Clinical Investigators; Research to Prevent Blindness Walt and Lilly Disney Award; Thermo Fisher Cellome Award; 2009 Heed Ophthalmic Foundation Fellowship Award; 2006 Association of University Professors of Ophthalmology Research Forum Winner; 2004 Best Housestaff Teaching Award



John H.K. Liu, Ph.D.

Adjunct Professor of Ophthalmology
Director, Glaucoma Molecular Pharmacology
Laboratory

Graduate School

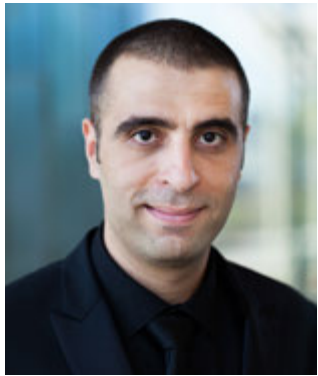
National Tsing Hua University (M.S.)
Texas A&M University (Ph.D.)

Postdoctoral Fellowship

Harvard University Medical School

Special Interests

Regulation of intraocular pressure and ocular blood flow; 24-hour sleep laboratory for glaucoma and other eye diseases



Akram Belghith, Ph.D.

Assistant Project Scientist of
Ophthalmology

Graduate School

University of Strasbourg, France

Postdoctoral Fellowship

University of California, San Diego

Special Interests

Change detection and monitoring of glaucoma;
Image processing and machine learning classifier
analyses



Christopher Bowd, Ph.D.

Research Scientist of Ophthalmology
Director, Hamilton Glaucoma Center-based
Visual Field Assessment Center
Co-Director, Hamilton Glaucoma Center-
based Imaging Data Evaluation and
Analysis (IDEA) Center

Graduate School

Washington State University

Postdoctoral Fellowship

University of California, San Diego

Special Interests

Early detection of glaucoma; Improved techniques
for monitoring structural and functional change
related to glaucomatous progression using machine
learning and pattern recognition based-techniques;
Combining structural and functional measurements
to improve detection of glaucomatous progression



Andrew D. Huberman, Ph.D.

Assistant Professor of Neurosciences/
Neurobiology/Ophthalmology

Graduate School

University of California, Davis

Postdoctoral Fellowship

Stanford University School of Medicine

Special Interests

Retinal development and retinal ganglion cells

Notables

Pew Biomedical Scholar Award (2013-2016);
McKnight Neuroscience Scholar Award (2013-2015)



Won-Kyu (Daniel) Ju, Ph.D.

Associate Professor of
Ophthalmology

Graduate School

The Catholic University in Korea (Masters & Ph.D.)

Postdoctoral Fellowship

Washington University in St. Louis (Post-doctoral
Fellow)
Sanford-Burnham Medical Research Institute (Staff
Scientist)

Special Interests

Mechanisms for neuroprotection and
neurodegeneration in glaucoma; Oxidative
stress and glutamate excitotoxicity in glaucoma;
Mitochondrial dynamics, bioenergetics and
dysfunction in retinal ganglion cell (RGC) and
optic nerve head (ONH) astrocyte in glaucoma;
Mitochondria-related gene therapy for RGC and
ONH astrocyte neuroprotection in glaucoma



James D. Lindsey, Ph.D.

Adjunct Professor of Ophthalmology

Graduate School

University of California, San Diego

Postdoctoral Fellowship

John Hopkins University School of Medicine

Special Interests

Retinal ganglion cell function; Methods for retinal ganglion cell rescue and optic nerve regeneration; Mechanisms for aqueous outflow regulation



Peter Rosen, M.D.

Associate Clinical Professor
of Ophthalmology

Medical School

SUNY Downstate Medical Center

Residency

Manhattan Eye, Ear & Throat Hospital,
Cornell University

Certification

Board Certification in Ophthalmology

Special Interests

Connection between visual performance and task performance in all areas of eye disease; Psychophysics of visual performance; Use of driving simulator as a methodology for evaluation on the relationship of visual performance and task performance

Notables

Outstanding Physician Award



Rigby Slight, M.D.

Associate Clinical Professor
of Ophthalmology

Medical School

University of Oklahoma; Internship at UCLA

Residency

University of Southern California

Certification

Board Certification in Ophthalmology

Special Interests

UC San Diego sleep study comparing the effects of investigational eye drops; UC San Diego Diagnostic Innovations in Glaucoma Study; Clinical research in glaucoma; UC San Diego Optic Disc Reading Center



Siamak Yousefi, Ph.D.

Assistant Project Scientist
of Ophthalmology

Graduate School

Sahand University of Technology (M.S.)
University of Texas at Dallas (Ph.D.)

Postdoctoral Fellowship

University of California, Los Angeles
University of California, San Diego

Special Interests

Data mining, machine learning, and pattern recognition; Ophthalmic image analysis, optical imaging, and medical imaging; Brain-Computer Interface (BCI)

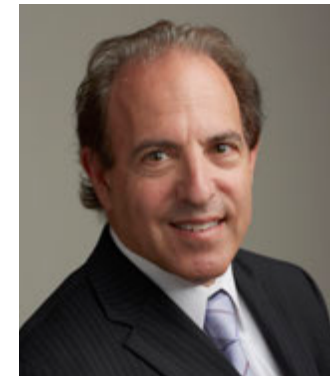
Notables

Co-author of the Best Poster Award; Received TA/RA Full Graduate Scholarship Award from Electrical Engineering Department of UTD



RETINA AND VITREOUS

Diseases of the retina cause severe and debilitating vision loss. Our retina physicians diagnose and treat macular degeneration, diabetic retinopathy, tumors, inherited retinal disease, retinal detachment, macular holes, and other important retinal diseases. The Joan and Irwin Jacobs Retina Center houses research projects seeking to find solutions for people of all ages who suffer from retinal conditions. The clinical research center at the Jacobs Retina Center enables patients to benefit from the latest advances in diagnostic equipment and therapies. Researchers working in the Center's laboratories apply the power of genetics and stem cell research towards the treatment of blinding diseases.



William R. Freeman, M.D.

Vice Chairman and Distinguished Professor
of Ophthalmology
Director, Jacobs Retina Center
Co-Director, Retina Division
Co-Director UCSD Retinal Engineering
Center, Institute of Engineering in Medicine

Medical School

Mount Sinai School of Medicine, New York

Residency

Lenox Hill Hospital, New York

Fellowship

University of California, San Francisco
(Uveitis & Immunology)

University of Southern California, Los Angeles
(Vitreoretinal Surgery)

Certification

Board Certification in Ophthalmology

Special Interests

Complicated retinal detachment; Diabetic retinopathy; Macular holes & age-related macular degeneration

Notables

2014 Best Doctors in America; 2013 US News and World Report's Top Doctors; Research to Prevent Blindness, Physician Scientist Award; Foundation Fighting Blindness Award; City of San Diego Mayor Award; American Academy of Ophthalmology; Editor's Choice Lecture; America's Top Ophthalmologists; ARVO Silver Medal Fellow; Professor of Ophthalmology (Hon.), Wenzhou Medical College, People's Republic of China



Michael H. Goldbaum, M.D.

Professor of Ophthalmology in Residence
Co-Director, Retina Division

Medical School

Tulane University School of Medicine (M.D.)
Stanford University (M.S.)

Residency

Tulane University School of Postgraduate
Medicine & U.S. Naval Hospital

Fellowship

Cornell University Medical Center and
New York Hospital

Certification

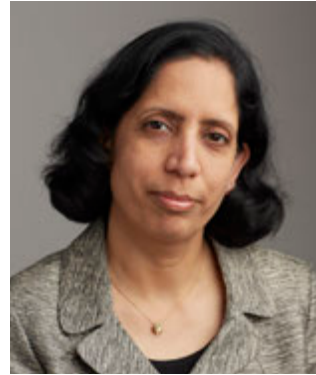
Board Certification in Ophthalmology

Special Interests

Surgical & medical treatment of the retina
and vitreous; Macular degeneration; Pediatric
retina; Ocular tumors; Glaucoma informatics

Notables

2013 US News and World Report's Top Doctors;
2013 San Diego Magazine Top Doctor; Senior
Achievement Award American Academy
of Ophthalmology; Top Doctors, San Diego



Radha Ayyagari, Ph.D.

Professor in Residence of Ophthalmology &
Pathology
Chief, Ophthalmic Molecular Diagnostic
Laboratory (CLIA certified)
Director, Shiley Eye Center BioBank

Graduate School

Osmania University, Hyderabad, India

Postdoctoral Fellowship

Molecular Genetics at the National Eye Institute,
NIH, Bethesda

Certification

Board Certification in Molecular Diagnostics

Special Interests

Molecular genetics of macular and retinal dystrophy;
Biological mechanisms underlying retinal diseases;
Age-related macular degeneration; Diabetic
retinopathy

Notables

Sybil B. Barrington Scholar Award;
Lew R. Wasserman Merit Award



Dirk-Uwe Bartsch, Ph.D.

Associate Adjunct Professor
of Ophthalmology
Co-Director, Jacobs Retina Center

Graduate School

University of California, San Diego

Postdoctoral Fellowship

University of California, San Diego

Special Interests

Retinal imaging scanning laser imaging -confocal/
non-confocal; Optical Coherence Tomography
(OCT); Indocyanine green and fluorescein
angiography; Tomographic reconstruction of the
posterior pole

Notables

Achievement Award from the American Academy
of Ophthalmology; Fellow of the Association for
Research in Vision and Ophthalmology; Association
for Research in Vision and Ophthalmology (ARVO)
Gold Fellow in the Class of 2013



Lingyun Cheng, M.D.

Associate Adjunct Professor
of Ophthalmology
Director, Ocular Pharmacology

Medical School

Shanxi Medical University, China

Residency

The First Teaching Hospital of Shanxi Medical
University, China

Fellowship

University of California, San Diego
Ideta Eye Hospital, Japan

Special Interests

Ocular drug delivery and vitreoretinal diseases



Henry A. Ferreyra, M.D.

Associate Clinical Professor
of Ophthalmology

Medical School

University of California, San Diego

Residency

University of California, San Diego

Fellowship

University of California, San Diego

Certification

Board Certification in Ophthalmology

Special Interests

Electrophysiology; Inherited disorders of the retina; Age-related macular degeneration; Diabetic retinopathy; Retinopathy of prematurity

Notables

Outstanding Teaching Award; Clinical Teaching Award



Massoud Khraiche, M.S.E., Ph.D.

Assistant Project Scientist
of Ophthalmology

Graduate School

Arizona State University (M.S.E. and Ph.D.)

Postdoctoral Fellowship

University of California, San Diego, Bioengineering

Special Interests

Retinal Prosthesis; Neural Engineering;
Nanotechnologies for interfacing with diseased retina



Eric Nudleman, M.D., Ph.D.

Assistant Professor
of Clinical Ophthalmology

Medical School

Albert Einstein College of Medicine (M.D.)
Stanford University (Ph.D.)

Residency

Washington University in St. Louis

Fellowship

Associated Retinal Consultants / William Beaumont Hospital

Certification

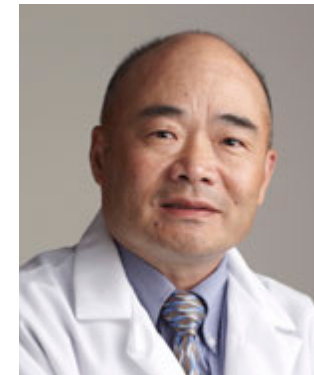
Board Certification in Ophthalmology

Special Interests

Adult and pediatric vitreoretinal diseases, including macular degeneration, diabetic eye disease, retinal vein occlusions, retinal detachments, proliferative vitreoretinopathy, macular holes and epiretinal membranes; Specialty interest in pediatric vitreoretinal diseases, including the surgical management of advanced retinopathy of prematurity, familial exudative vitreoretinopathy, Coats disease, persistent fetal vascular syndrome, and intraocular trauma; Scientific focus on developmental angiogenesis, with emphasis on the role of the Wnt Signaling pathway in developmental vascular diseases

Notables

2013 Ronald G. Michels Fellowship



Peter Shaw, Ph.D.

Project Scientist
of Ophthalmology

Graduate School

McMaster University, Ontario, Canada

Postdoctoral Fellowship

University of California, San Francisco

Special Interests

Evaluation and diagnosis of eye diseases including macular degeneration; Diabetic retinopathy; Glaucoma and inherited retinal degenerations by genetic variants and plasma biomarkers; Investigation of how genetic and oxidative stress risk factors impact on disease pathology; Development of molecular and gene therapy methods to treat eye diseases

Notables

Cheng Scholar; Van Slyke Award



Gabriel A. Silva, M.Sc., Ph.D.

Associate Professor of Bioengineering
Associate Adjunct Professor
of Ophthalmology
Jacobs Faculty Fellows Professor
of Bioengineering
Co-Director, Retinal Engineering Center

Graduate School

University of Illinois at Chicago (Ph.D.)
University of Toronto (M.Sc.)

Postdoctoral Fellowship

Northwestern University

Special Interests

Cell signaling and information processing in biological cellular neural networks; Retinal physiology; Neural engineering; Degenerative retinal disorders

Notables

2014 Biocom Cell Art Exhibit winning entry: "SEM of cortical neurons on optoelectronics nanowires"; 2013 - Society for Neuroscience (SFN) 2013 annual meeting 'Hot Topic' abstract; 2013 - 'Faculty of the Year' award for undergraduate education; 2012 - Tau Beta Pi engineering Honors Society; Beverley and Clarence Chandran Distinguished Lecture, Duke University; Jacobs Faculty Fellows Endowed Chair in Bioengineering; American Society of Mechanical Engineers (ASME) Y.C. Fung Young Investigator Award; Wallace Coulter Foundation Early Career Award



Kang Zhang, M.D., Ph.D.

Professor of Ophthalmology
Chief, Ophthalmic Genetics

Medical School

Harvard Medical School/Massachusetts Institute of Technology (M.D./Ph.D. Program)

Residency

Wilmer Eye Institute at Johns Hopkins University

Postdoctoral Fellowship

University of Utah School of Medicine

Certification

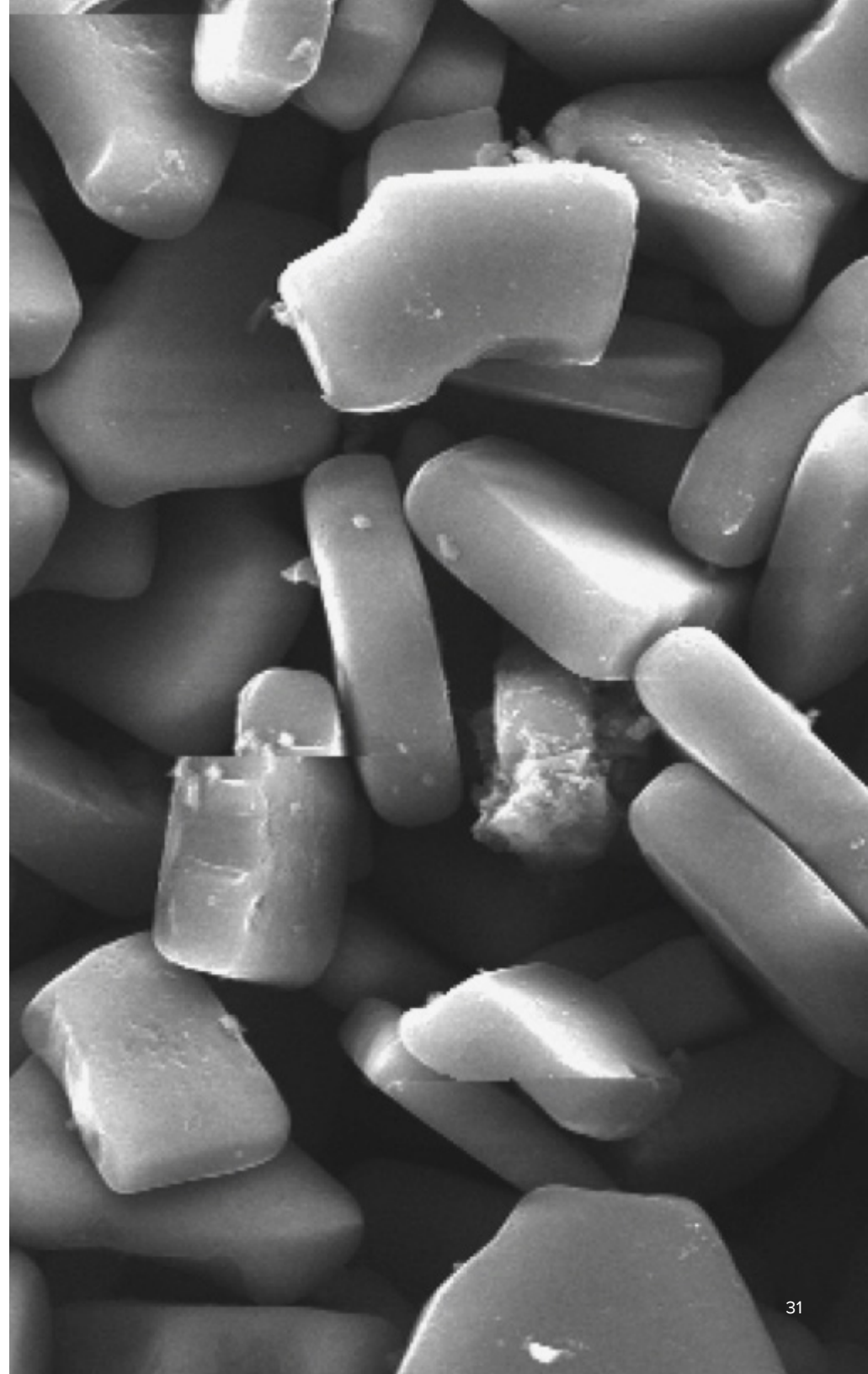
Board Certification in Ophthalmology

Special Interests

Age related macular degeneration; Diabetic retinopathy; Inherited retinal degeneration

Notables

Burroughs Wellcome Fund Clinical Scientist Award in Translational Research; NIH Director's Transformative R01 Award; NIH K23 Mentored Clinician Scientist Award; Mentored Clinician Scientist Award; Lew R. Wasserman Merit Award; Charles Schepens Award for Excellence in Retina Research; Stark Research Award in Ophthalmology; Knights Templar Eye Foundation Research Award; First Bower Award





CORNEA AND REFRACTIVE

The Shiley Eye Center Cornea and Refractive speciality is dedicated to the health and functioning of the cornea and combines unparalleled care, expertise, and state-of-the-art equipment to ensure the best experience for patients. Shiley offers treatments for complex and high-risk corneal and external diseases, as well as the most current vision correction procedures.



Natalie Afshari, M.D.

Professor of Ophthalmology
Stuart I. Brown M.D. Chair in Ophthalmology in
Memory of Donald P. Shiley
Chief, Division of Cornea and Refractive Surgery
Director of Education

Medical School

Stanford University Medical School

Residency

Harvard University, Massachusetts Eye and Ear Infirmary

Fellowship

Harvard University, Massachusetts Eye and Ear Infirmary

Certification

Board Certification in Ophthalmology

Special Interests

Fuchs Dystrophy; Cataract surgery; Corneal transplantation; Endothelial keratoplasty (DSAEK & DMEK); Intacs and collagen crosslinking for keratoconus; Laser refractive surgery, including LASIK and PRK, Surgical and medical diseases of cornea

Notables

2014 Women Who Mean Business Award; U.S. News and World Report Top Doctors List for 2013 (1% in the nation); 2014 Senior Achievement Award of American Academy of Ophthalmology; Top 10 Women in Medicine Award 2012; Cornea Subspecialty Day AAO Co-Director 2012; Cornea Society, Board of Directors 2012-2013; Chief Judge for American Society of Cataract and Refractive Surgery Scientific Posters 2012 and 2013; CPE Cornea Fellows National Course Director 2012-2013; Leadership Development Program of American Academy of Ophthalmology 2012; Best Doctors in America; American Academy of Ophthalmology Achievement Award; American Academy of Ophthalmology Secretariat Award; Councilor Emeritus American Academy of Ophthalmology; Co-editor Principles and Practice of Cornea; Research to Prevent Blindness Award; Heed Foundation Award



Stuart I. Brown, M.D.

Professor of Ophthalmology
Dr. Richard and Tatiana Lansche
Chair of Ophthalmology

Medical School

University of Illinois Medical School

Residency

Tulane Medical School

Fellowship

Harvard University, Massachusetts Eye and Ear
Infirmary

Certification

Board Certification in Ophthalmology

Special Interests

Methods of improving the
efficiency of eye care delivery to pre-school
age children throughout California; Corneal
transplantation; Cataract surgery

Notables

Heed Ophthalmic Foundation Award; McLean
Medal, Cornell/Columbia University; Outstanding
Teacher Award



Weldon W. Haw, M.D.

Clinical Professor of Ophthalmology
Chief of Ophthalmology at Veterans
Administration Medical Hospital

Medical School

University of California, Los Angeles School of
Medicine

Residency

Stanford University School of Medicine
(Chief Resident)

Fellowship

Stanford University School of Medicine (Chief Fellow)

Certification

Board Certification in Ophthalmology

Special Interests

Cornea transplantation; Refractive
surgery/LASIK; Cataract surgery

Notables

US News & World Report's Top Doctor; America's
Top Doctors



Chris W. Heichel, M.D.

Associate Clinical Professor
of Ophthalmology

Medical School

Chicago Medical School

Residency

University of California, San Diego
(Chief Resident)

Fellowship

University of California, San Diego

Certification

Board Certification in Ophthalmology

Special Interests

Corneal transplantations and keratoprosthesis
(K-PRO); Descemet's stripping endothelial
keratoplasty (DSAEK); Descemet's membrane
endothelial keratoplasty (DMEK); Anterior segment
and iris reconstruction; Surgeries for challenging
and traumatic cataracts; IOL procedures, including
reposition, exchange and sutured IOLs; LASIK,
PRK and Visian ICL; Advanced techniques in laser
& refractive surgery; Treatment of Keratoconus,
including INTACS and Collagen CrossLinking; Ocular
surface tumors; Limbal stem cell transplantation

Notables

2013 US News & World Report's Top Doctor;
America's Top Ophthalmologists; San Diego
Magazine Top Doctor; Outstanding Surgical
Teaching; Outstanding Teacher Award



Jiagang "Jack" Zhao, Ph.D.

Associate Project Scientist of Ophthalmology

Graduate School

Mount Sinai School of Medicine, New York

Postdoctoral Fellowship

Salk Institute, La Jolla, California

Special Interests

Stem cell-based approaches for ocular disease
modeling and treatment; Differentiation mechanisms
of eye cell fate restriction from pluripotent stem
cells

NEURO- OPHTHALMOLOGY

Neuro-ophthalmologists diagnose and treat neuro-sensory disorders including brain tumors, double vision, giant cell arteritis, ischemic optic neuropathy, optic neuritis, papilledema, pseudotumor cerebri, thyroid eye disease and visual field defects. Shiley Eye Center's skilled ophthalmologists conduct diagnostic testing and thorough evaluation while working with the referring physician to manage the condition or illness.



Peter J. Savino, M.D.

Clinical Professor of Ophthalmology & Neurosciences

Medical School

University of Bologna School of Medicine

Residency

Georgetown University Medical Center

Fellowship

University of Miami

Certification

Board Certification in Ophthalmology

Special Interests

Myasthenia gravis; Optic neuritis, atrophy and neuropathy; Brain and nervous system tumors; Visual field defects; Degenerative, metabolic inflammatory & demyelinating diseases; Vascular disorders

Notables

2012, 2013 U.S. News and World Report Top Doctor (Top 1%); 2012, 2013 Outstanding Clinical Teaching Award, UC San Diego, Shiley Eye Center; Life Achievement Honor Award, American Academy of Ophthalmology; Honorary Fellowship, The Royal Australian and New Zealand College of Ophthalmologists; George L. Tabor, M.D. Award; Lifetime Member Awarded, Philadelphia Ophthalmology Club; New York State Sons of Italy Anton Banko Award; Golden Apple Award, Best Teacher of the Year Award; One of the "Best 100 Ophthalmologists in America," Ophthalmology Times; Beem Fisher Award, Chicago Ophthalmological Society

OPHTHALMIC PLASTIC AND RECONSTRUCTIVE SURGERY

Orbits. Eyelids. Face. Lacrimal system. These are the domains of oculofacial plastic surgery. Birth defects, cancer, trauma and the aging process can all alter the periorbital region. These surgeons rebuild, reconstruct, renew and make whole again. The UCSD Division of Ophthalmic Plastic and Reconstructive Surgery is an internationally recognized leader in patient care, teaching and research. Dr. Kikkawa and Dr. Korn have pioneered innovative operations and techniques that have become the standard.



Don O. Kikkawa, M.D., F.A.C.S.

Vice Chairman and Professor of Clinical Ophthalmology
Chief, Division of Oculofacial Plastic and Reconstructive Surgery

Medical School

St. Louis University School of Medicine

Residency

University of California, Los Angeles

Fellowship

University of Wisconsin, Madison

Certification

Board Certification in Ophthalmology

Special Interests

Oculofacial surgery; Eyelid, lacrimal and orbital surgery; Thyroid eye disease (orbital decompression and eyelid surgery); Craniofacial disorders involving the eyelids and orbits; Orbital and eyelid tumors; Facial aesthetics - soft tissue fillers and injectables.

Notables

President, American Society of Ophthalmic Plastic and Reconstructive Surgery (ASOPRS); Best Doctors in America; America's Top Doctor; 2013 U.S. News and World Report Top Doctor (Top 1%); 2012-2014 San Diego Magazine Physician of Exceptional Excellence; Top Doctors San Diego; Lester T. Jones Award; Marvin H. Quickert Award; ASOPRS Research Award; American Academy of Ophthalmology Senior Achievement Award; Outstanding Teaching Award



Bobby S. Korn, M.D., Ph.D., F.A.C.S.

Associate Professor of Clinical Ophthalmology

Medical School

University of Texas, Southwestern Medical School (M.D. & Ph.D.)

Residency

University of California, San Diego (Chief Resident)

Fellowship

University of California, San Diego

Certification

Board Certification in Ophthalmology

Special Interests

Cosmetic & reconstructive surgery (eyelid & face); Blepharoplasty (eyelid lift surgery); Ptosis surgery (droopy lid surgery); Asian Blepharoplasty (double eyelid surgery); Congenital birth defects; Endoscopic forehead lifting; Thyroid eye disease management; Eyelid and orbital tumors and cancers Lacrimal/tear outflow system disorders; Bulging or proptosis of eyes; Reconstruction of eyelids post cancer removal; Reconstruction after trauma / eye injuries; Botox, Restylane, Juvederm & facial fillers; Skin rejuvenation – chemical peels and laser

Notables

2014 Top Physician by San Diego Magazine; 2014 Outstanding Teacher Award from USC D Ophthalmology Residents; 2014 ASOPRS Foundation Grant; Editorial Board, Ophthalmic Plastic and Reconstructive Surgery; 2012, 2013 U.S. News and World Report Top Doctor; 2008-2013 Star Recognition Award for Highest Rated Instructional Course awarded by the American Academy of Ophthalmology; 2012, 2013 San Diego Magazine Physician of Exceptional Excellence; Editorial Board EyeNet Magazine, Editorial Board AAO BSCS Volume 7, American Academy of Ophthalmology Achievement Award; ASOPRS Research Award; Marvin H. Quickert Award; Outstanding teaching Award; Editor, Video Atlas of Oculofacial Plastic and Reconstructive Surgery Orbits. Eyelids



PEDIATRIC OPHTHALMOLOGY AND ADULT EYE REALIGNMENT SERVICES

Preventing and treating vision loss and ocular problems in children is the highest priority at the Ratner Children's Eye Center. Dr. David Granet and Dr. Shira Robbins are world-renowned specialists in helping children with eye misalignments (strabismus), nystagmus, congenital diseases like pediatric cataracts and glaucoma, acquired problems from blocked tear ducts to "lazy eye" (amblyopia) as well as trauma. From premature babies to teenagers, our team ensures that each child seen at the family-oriented Ratner Children's Eye Center is given the attention and personal medical care they deserve in a child-friendly atmosphere. Adults with strabismus suffer from an old childhood problem, trauma, or a condition causing eye misalignment and require individualized intervention. Recognized worldwide for their teaching and developments in this field, the specialized surgeons at the Ratner Eye Center can help virtually everyone – regardless of age – suffering from various ocular misalignments and their consequences.



David B. Granet, M.D., F.A.A.O., F.A.C.S., F.A.A.P.

Professor of Ophthalmology & Pediatrics
Anne F. Ratner Chair of Pediatric Ophthalmology
Director, Anne F. and Abraham Ratner
Children's Eye Center
Director, Division of Pediatric Ophthalmology

Medical School

Yale University School of Medicine

Residency

New York University Medical Center (Chief Resident)

Fellowship

Children's Hospital of Philadelphia University of
Pennsylvania Medical Scheie Eye Institute

Certification

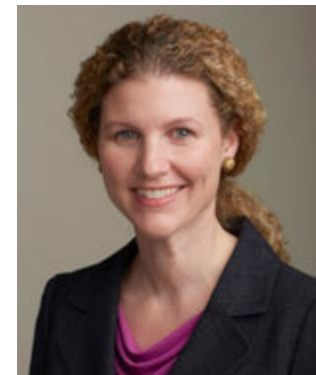
Board Certification in Ophthalmology

Special Interests

Pediatric ophthalmology & strabismus; Adult eye movement problems;
State-of-the-art adjustable suture strabismus surgery; Childhood eye
misalignments & disorders; Nystagmus; Learning disorders & role of
vision

Notables

2012, 2013 US News and World Report Top Doctors (Top 1%);
2012 Senior Honor Award, American Association for Pediatric
Ophthalmology & Strabismus; 2013 Aurora Award for UCSD-TV show
"Colon Cancer Screening"; 2013 San Diego Magazine Top Doctors;
Senior Achievement Award AAO; American Association of Pediatric
Ophthalmology Senior Honor Award; Chair-Elect AAP Section of
Ophthalmology; Best Doctors in America; Top Doctors in San Diego;
Visiting Professor National University Singapore; Co-Founder World
Congress of Paediatric Ophthalmology & Strabismus;
Co-Editor AAP Case Studies in Ophthalmology; Co-Director AAO
Pediatric Ophthalmology Subspecialty Day 2011; Bronze Telly Award;
Gold Aurora Award; Emmy Award



Shira L. Robbins, M.D., F.A.A.P.

Associate Clinical Professor
Educational Director of the Pediatric
Ophthalmology/Strabismus Division

Medical School

Medical College of Pennsylvania Hospital

Residency

Hahnemann University Hospital

Fellowship

University of California, San Diego & Naval Medical Center

Certification

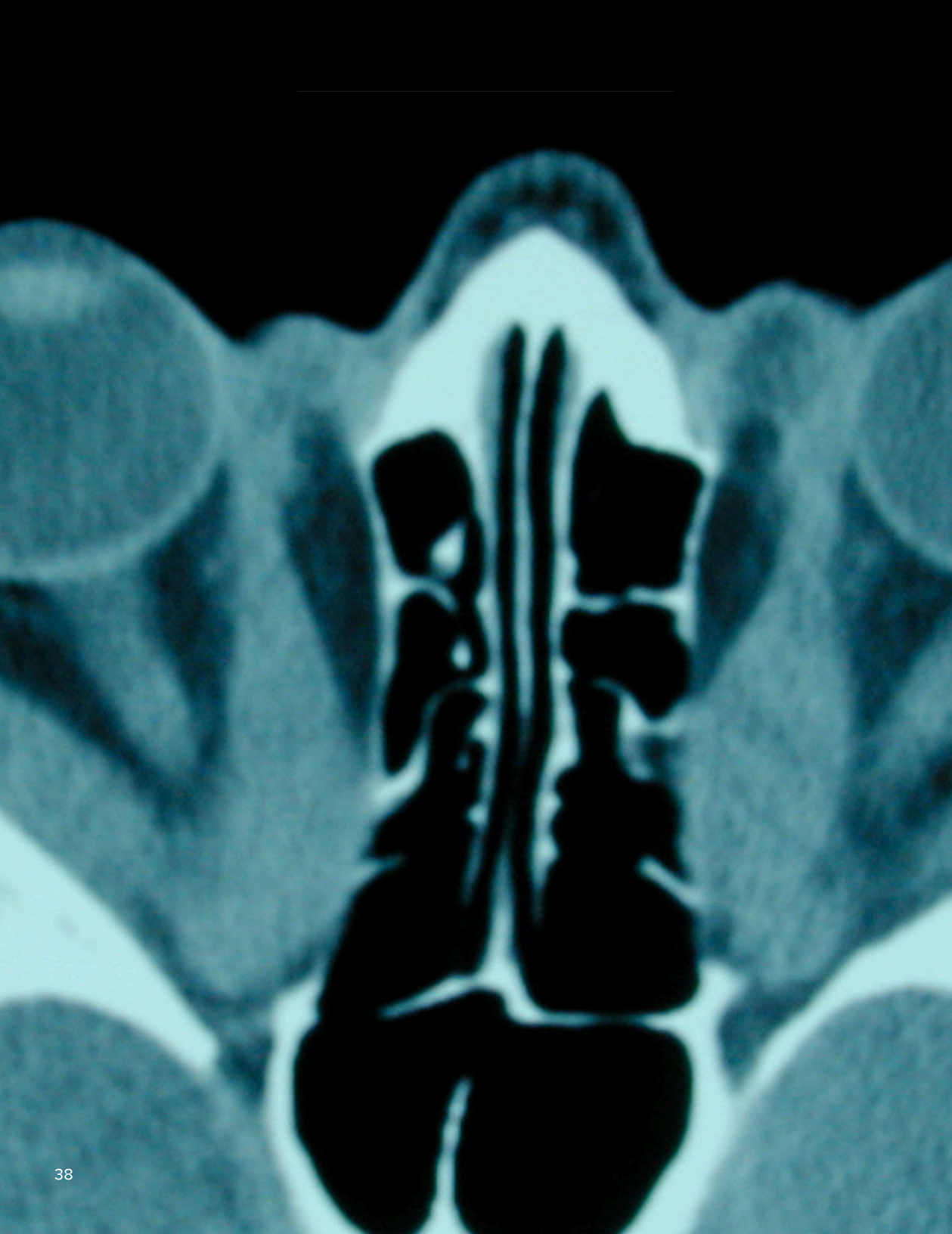
Board Certification in Ophthalmology

Special Interests

Strabismus/eye misalignment/double vision; Amblyopia;
Retinopathy of prematurity; Pediatric glaucoma & cataracts;
including intraocular lens placement; Nasolacrimal duct
disorders; Congenital eye syndromes; Craniofacial syndromes;
Systemic diseases affecting the eyes; Nystagmus

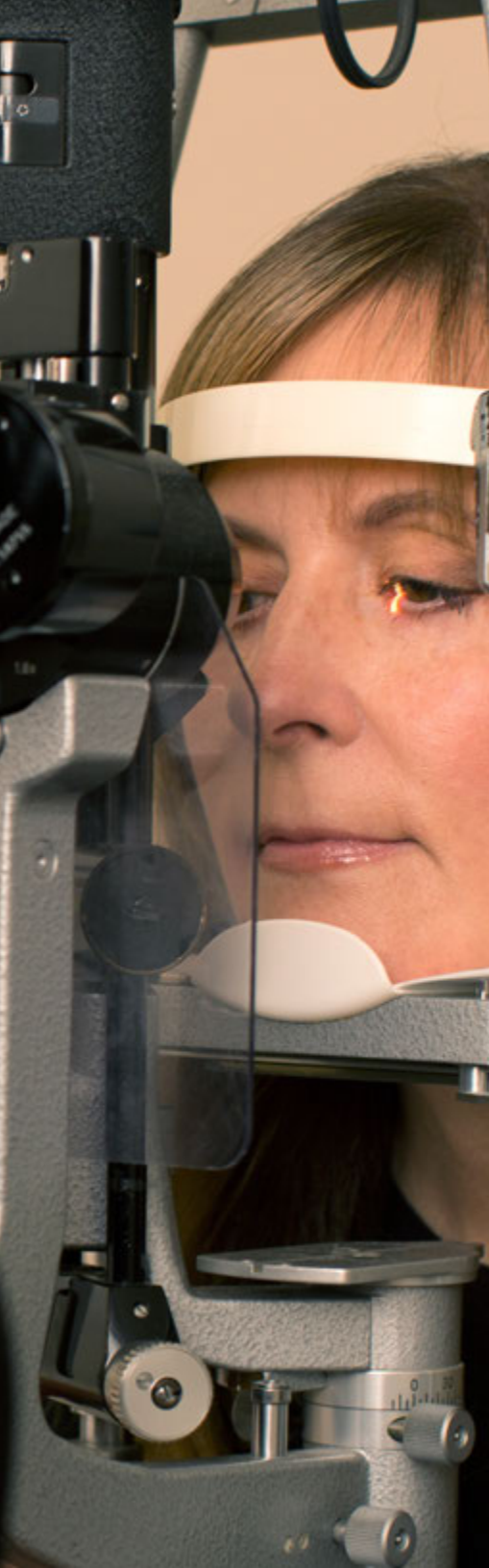
Notables

2013 San Diego Magazine Top Doctors; 2013-2014 Best Doctors
in America, National; 2014 Invited to the Editorial Board of
Current Ophthalmology Reports (journal); 2014 Nominated
Leonard Tow Humanism in Medicine Award; 2014 Elected into
UC San Diego Academy of Clinician Scholars; Textbook Editor,
AAP Challenging Cases in Pediatric Ophthalmology; Journal
Section Editor, Current Ophthalmology Reports; National
Institutes of Health LRP Award for Clinical Research



THYROID EYE CLINIC

The UC San Diego Thyroid Eye Clinic began in 1997 as the first of its kind in the nation. Thyroid Eye Disease is a complex autoimmune disease that affects not only vision but also causes pain and deformity. Drs. Granet, Kikkawa and Korn have helped hundreds of patients with this disfiguring disorder and have published extensively on its characteristics and treatment.



COMPREHENSIVE OPHTHALMOLOGY

The UC San Diego Comprehensive Ophthalmology division provides a variety of services and ophthalmic evaluations that screen and treat a wide range of ophthalmic conditions, including cataracts, ocular surface disorders, glaucoma, diabetic retinopathy, conjunctivitis, blepharitis and macular degeneration. Primary eye care is provided for all types of conditions of the eye and surrounding structures, both routine and urgent. Treatments offered vary from medications and glasses prescriptions; to laser therapy, small in-office procedures and more invasive surgical options.



Jeffrey E. Lee, M.D.

Clinical Assistant Professor of Ophthalmology
Residency Program Director
Chief of Clinical Service, UC San Diego
Medical Center
Director, Teleophthalmology

Medical School

University of California, San Diego

Residency

University of California, San Diego

Certification

Board Certification in Ophthalmology

Special Interests

Orbital compartment syndrome in burn patients;
Complicated cataract surgery; Facial burns;
Orbital trauma; Inpatient ophthalmology; Ocular
manifestations of HIV; Teleophthalmology

Notables

Ophthalmology Outstanding Teacher 2013 for
Residents; Ophthalmology Outstanding Teacher
2013 for Medical Students; UC San Diego PACE
Faculty Award for Innovation and Quality



Thao P. Nguyen, M.D.

Assistant Clinical Professor
of Ophthalmology

Medical School

University of Oklahoma, Tulsa

Residency

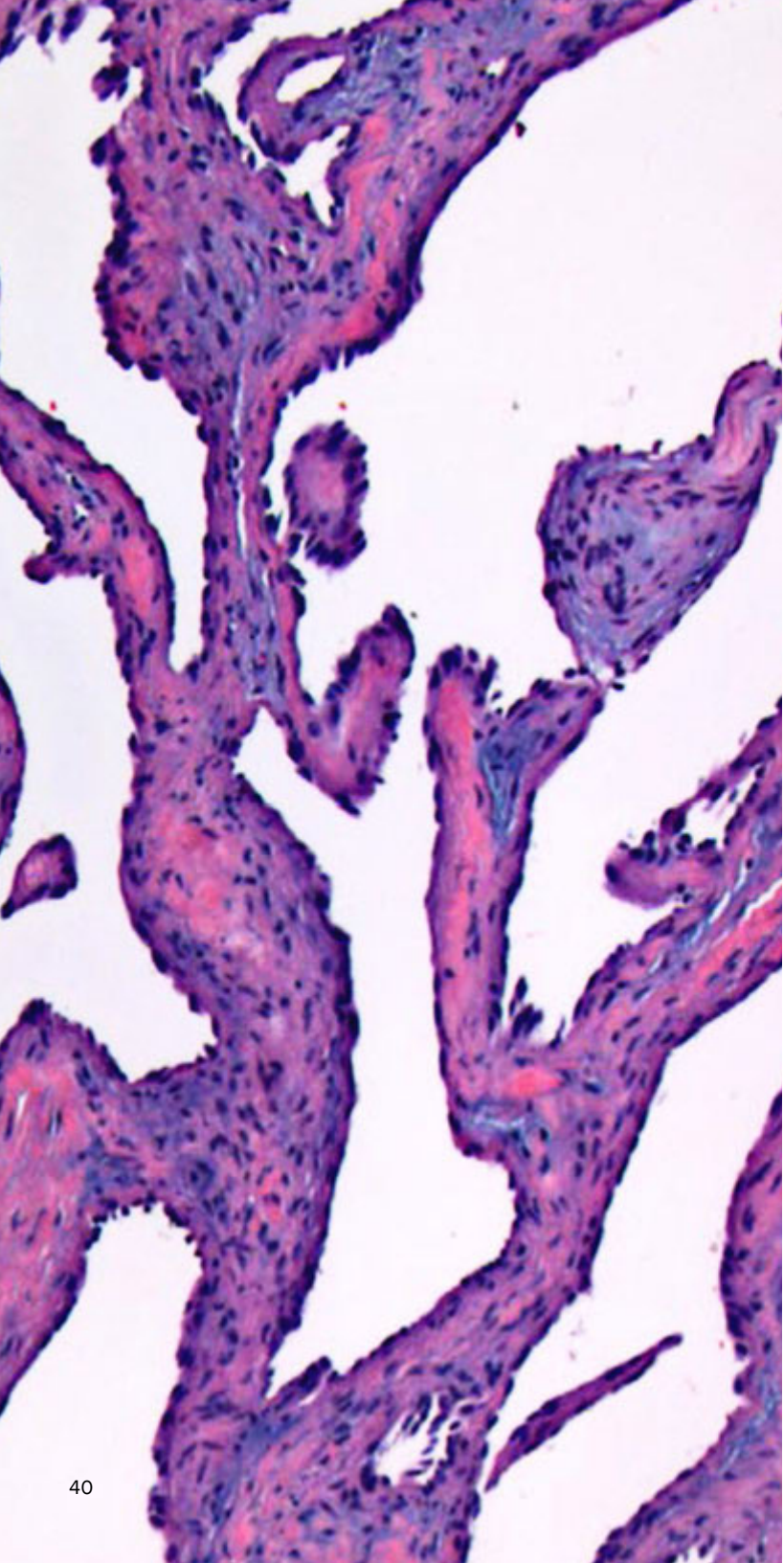
University of Rochester - New York

Fellowship

University of California, San Diego

Certification

Board Certification in Ophthalmology



OPHTHALMIC PATHOLOGY

Ophthalmic pathology service focuses on diseases of the eye and its neighboring tissues. Precision diagnosis of diseases is provided by the ophthalmic pathology service. Diseased tissues are examined macroscopically, microscopically and on the ultrastructural level. Advanced genomic, proteomic, and cytogenetic techniques can be utilized to diagnose diseases at a molecular level. The pathologic diagnosis of the disease plays a vital role in patient care.



Jonathan H. Lin, M.D., Ph.D., F.C.A.P.

Assistant Professor of Ophthalmology
Pathology, Cellular and Molecular Medicine

Medical School

Columbia University College of Physicians & Surgeons (M.D. & Ph.D.)

Residency

Brigham Women's Hospital (Anatomic Pathology)

Fellowship

University of California, San Francisco
(Ophthalmic Pathology)

Certification

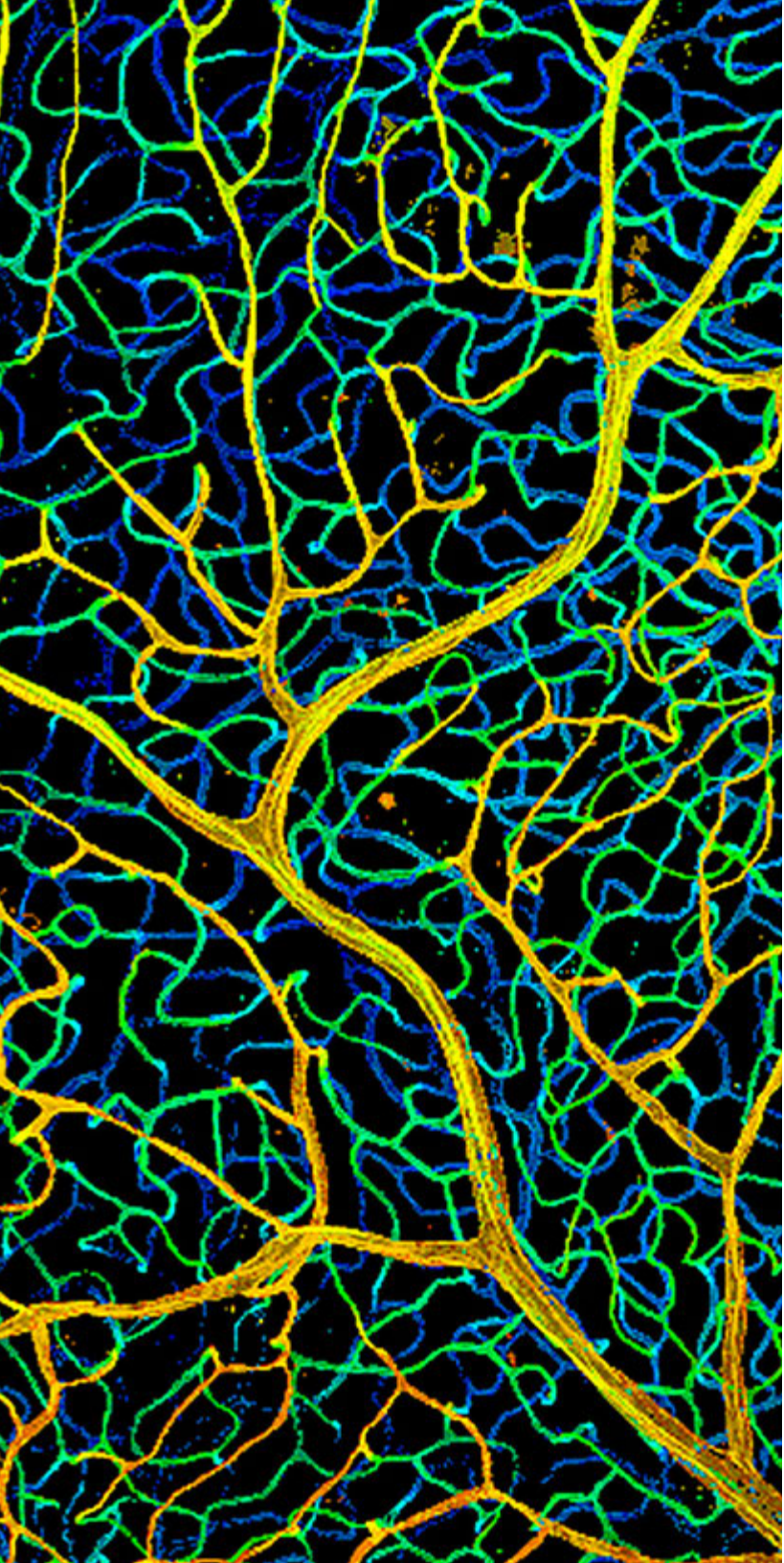
Board Certification in Anatomic Pathology

Special Interests

Ophthalmic Pathology including pigmented ocular lesions (uveal melanoma, primary acquired melanosis); Basal cell carcinoma; Sebaceous gland lesions; Inflammatory lesions (sclerosing orbital inflammatory pseudotumor, IgG4 disease); MALToma; Corneas (PKPs, DSAEKs); Conjunctival biopsies (conjunctival intraepithelial neoplasia - CIN); Orbital lesions; Intraocular fine needle aspirates/vitreotomy specimens; Cellular and molecular mechanisms of retinal degeneration; RPE and ocular stem cells

Notables

American Society for Investigative Pathology Ramzi Cotran Early Investigator Award; Karl Kirchgessner Foundation Vision Research Award; American Federation for Aging Research New Investigator Award; Hellman Family Foundation Jon I. Isenberg Fellow; Hope for Vision Foundation New Investigator Award



RETINAL VASCULAR DISEASES

The regulation of angiogenesis is a pathological process that occurs in retinal vascular diseases such as diabetic retinopathy and age-related macular degeneration. Vascular endothelial growth factor (VEGF) is the principle mediator in this complex disease process and in 1989, our laboratory cloned this gene. We have subsequently developed two inhibitors of VEGF, bevacizumab and ranibizumab for clinical use. In 2006, ranibizumab was approved for the treatment of wet AMD after multiple Phase III trials demonstrating that administration of such agent results in substantial visual acuity gains. Since 2006, the FDA has expanded the use of ranibizumab, approving it to treat retinal vein occlusion in 2010 and diabetic macular edema in 2012.



Napoleone Ferrara, M.D.

Distinguished Professor of Ophthalmology and Pathology
Senior Deputy Director for Basic Sciences,
UCSD Moores Cancer Center

Medical School

University of Catania Medical School, Catania, Italy

Residency

University of Catania Medical School, Catania, Italy

Fellowship

University of California, San Francisco

Special Interests

Regulation of angiogenesis (the formation of new blood vessels) and the role of VEGF (vascular endothelial growth factor); Continue to develop new therapies to treat age related macular degeneration building upon past development of Avastin® and Lucentis®

Notables

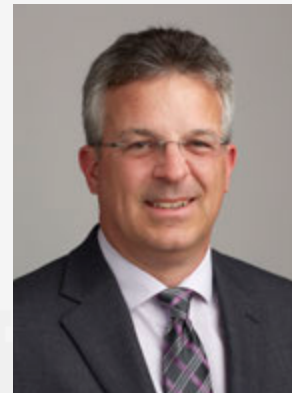
2014 Gairdner Foundation International Award; 2014 Antonio Champalimaud Vision Award; 2010 Lasker DeBakey Clinical Medical Research Award; 2012 Juvenile Diabetes Research Foundation Award; 2012 The Economist Innovation Award (Bioscience); 2013 Elected Fellow and Member of Council of Advisors to the American Association of Cancer Research Academy; Damon Runyon-Rachleff Innovation Award Committee Member; North American Vascular Biological Organization Scientific Advisory Board Member; San Francisco State University Biology Program Advisory Board Member; 2012 Humanitas Clinical Institute Scientific Advisory Board Member; 2013 The Economist Innovation Award Jury Member; 2013 Breakthrough Prize in Life Sciences



OPTOMETRY & LOW VISION

Shiley Eye Center optometrists are eye care professionals who perform comprehensive eye exams and are experts at fitting all types of contact lenses and glasses. Visual impairment from inherited diseases to diabetic retinopathy and macular degeneration can result in profound vision loss.

Using the latest technological advancements in optical aids, optometrists provide much needed care for our low vision patients. Working hand in hand with Shiley ophthalmologists, the optometry service strives to deliver the best possible care to each patient.



John F. Kulischak, O.D.
Optometry Supervisor



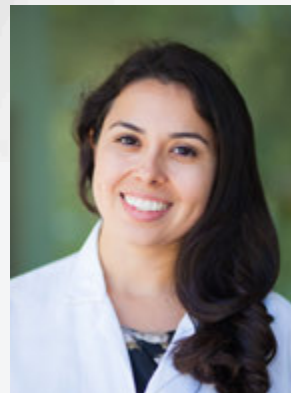
Anne B. Ho, O.D.



Pamela A. Hoo, O.D.



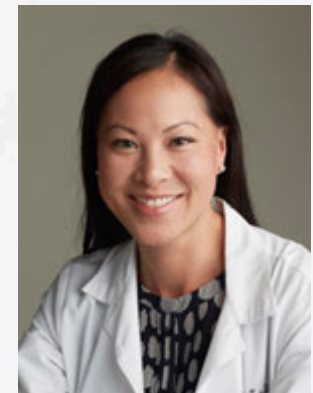
Lara Hustana, O.D.



Esmeralda McClean, O.D.



Lianne Mizoguchi, O.D.



Jessica A. Tasto, O.D.



(left to right) Usha Kumar, M.D., Charlotte Gore, M.D. (Chief Resident), Lilit Minasyan, M.D., Hema Ramkumar, M.D., Jean-Paul Abboud, M.D., Ph.D., Matthew Bedell, M.D., Brian Chang, M.D., Elizabeth Pinney, M.D., Cristiana Vasile, M.D., Abigail Huang, M.D., Roman Fajardo, M.D.

RESIDENCY

The UC San Diego Ophthalmology Residency Training Program is a three-year program with a total of 12 resident physicians (four per year of training).

Our highly selective residency program receives over 400 applications per year from all over the country to fill four positions. It is known for its outstanding clinical and surgical training, as well as the value placed on scholarly activity and compassionate patient care. Our residents are among the brightest and most motivated, and continue to be high achievers during and after their training. As a result, graduating residents are regularly chosen for competitive post-residency Fellowship training in various subspecialties of Ophthalmology, such as Cornea,

Glaucoma, Ophthalmic Plastic and Reconstructive Surgery and Retina.

During their training residents learn, under the supervision of the renowned Shiley faculty, to care for patients from all walks of life and with every type of eye problem, from common to very rare eye conditions. In addition, with Departmental support, residents partake in the many cutting-edge research opportunities available in the UC San Diego Department of Ophthalmology and present their work at pre-eminent national meetings

such as the American Academy of Ophthalmology and the Association for Research in Vision and Ophthalmology.

The UC San Diego Ophthalmology Residency Training Program was recently recognized by the national accrediting body, the Accreditation Council for Graduate Medical Education, with a commendation on the excellence of the Residency Program and its faculty.

Jeffrey E. Lee, M.D. is the Program Director for the Ophthalmology Residency Program and Assistant Professor of Clinical Ophthalmology. He is also the Clinical Service Chief of Ophthalmology at UC San Diego Hillcrest Medical Center where he serves a diverse group of patients with multiple medical issues. With elderly and indigent patients, Dr. Lee is committed to programs that bring quality vision care to underserved patients.

Dr. Lee is passionate about teaching residents, undergraduates and medical students and working with them to reach their maximum potential. Since becoming Program Director in 2012, the Program has added three more residents and now totals 12. They work at the Shiley Eye Center, the San Diego Veterans Affairs Medical Center, and UC San Diego Hillcrest Medical Center.

Dr. Lee noted, "I am honored to have been entrusted such a vital role in helping shape the future of such talented young ophthalmologists."

Dr. Lee earned his medical degree from UC San Diego and completed his residency at the Shiley Eye Center in 2009. He knows firsthand the competitive application "match" process, decision to pursue ophthalmology and then train as a resident.

"We are fortunate to have Dr. Lee mentoring our great team of residents. He combines his passion for patient care with lifelong learning," states Natalie A. Afshari, M.D., Professor of Ophthalmology and Director of Education at the Shiley Eye Center.



(above) Jeff Lee, M.D. with Residents.

Cornea

Nikki Heidi Camara, M.D.*
Sidney Chang, M.D.
Asmaneh "Aussie" Yamagata, M.D.

Oculoplastics

Bradford Lee, M.D.
Richard Scawn, M.D.

Pediatrics

Kweku Grant-Acquah, M.D.

Retina

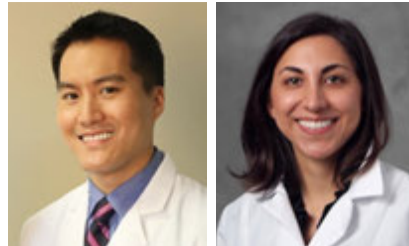
Cheryl Arcinue, M.D.
Giulio Barteselli, M.D.
Natalia Camacho, M.D.
Isaac Ezon, M.D.
Nima Hatami, Ph.D.*
Huiyuan Hou, Ph.D.
Chuanhong Jie, M.D.*
Jing Luo, M.D., Ph.D.
Feiyan Ma, M.D.
Arash Mozayan, M.D.
Kaihui Nan, Ph.D.*
Joseph Nezgoda, M.D.
Hong Ouyang, Ph.D.
Ling Zhao, Ph.D.

* Not Photographed

FELLOWS

Shiley Eye Center offers world-class fellowships in cornea, glaucoma, ophthalmic plastic and reconstructive surgery, pediatric ophthalmology, and retina. Fellows are exposed to intense training in both the clinical and research settings. Many go on to prominent academic positions around the world as well as practicing as outstanding clinicians in the global ophthalmic community.

CORNEA



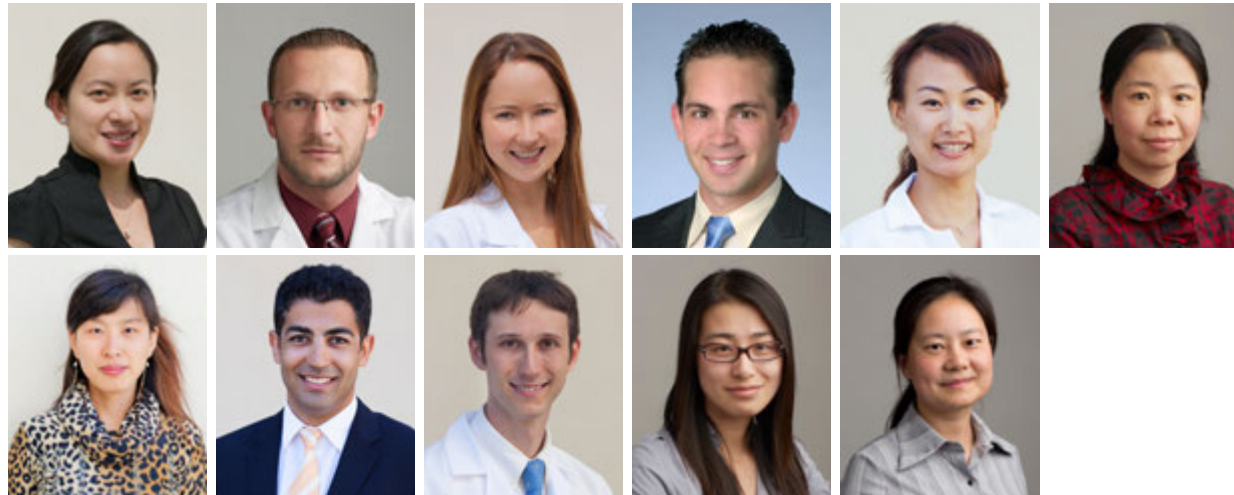
OCULOPLASTICS



PEDIATRICS



RETINA

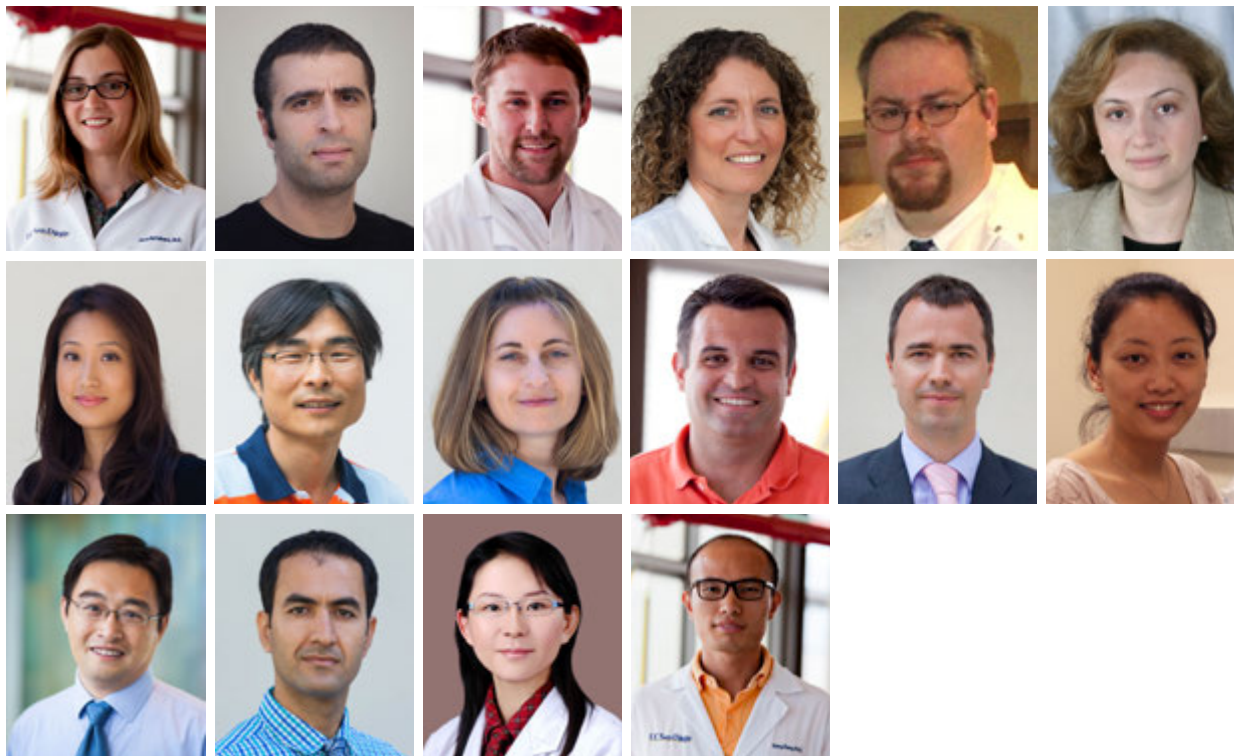


Glaucoma

Alena Bartakova, M.D.
Akram Belghith, Ph.D.
Evan Cameron, Ph.D.
Na'ama Hammel, M.D.
Fang Jiahua, M.D.*
Karl Kador, Ph.D.
Naira Khachatryan, M.D., Ph.D.
Tammy Kuang, M.D.*
Jane Kuo, Ph.D.*
Michelle Sato, M.D.
Myoung Sup Sim, Ph.D.
Arielle Spitze, M.D.
Travis Stiles, Ph.D.
Andrew Tatham, Ph.D.
Yan Wang, M.D., Ph.D.
Wenting Wu, Ph.D.*
Zhiyong Yang, Ph.D.
Siamak Yousefi, Ph.D.
Chunwei Zhang, M.D.
Xiong Zhang, Ph.D.

* Not Photographed

GLAUCOMA



OPHTHALMOLOGY EDUCATIONAL ACTIVITIES

OPHTHALMOLOGY COMMUNITY LECTURE SERIES AND GRAND ROUNDS

The UC San Diego Department of Ophthalmology holds a Community Lecture Series the first Monday of each month. The subjects cover all areas of ophthalmology and the visiting professor lecturers include world-renowned ophthalmologists. Continuing medical education (CME) credits are offered to attendees along with a reception immediately following the lectures. The lectures are held at the UC San Diego Moores in the Goldberg Auditorium.

The community is also invited to our weekly Grand Rounds every Monday afternoon. The Grand Rounds consist of case presentations with moderated discussion. Interesting eye diseases, treatment dilemmas and surgical challenges are often the theme. These are offered in the Shiley Eye Center Conference Room.



September 9, 2013

James P. McCulley, M.D.
The David Bruton, Jr. Chair in Ophthalmology
University of Texas Southwestern Medical Center
Title: "Lids, Lipids & Dry Eyes"

October 7, 2013

Rohit Varma, M.D., M.P.H.
Professor and Chair
Illinois Eye and Ear Infirmary
UIC Department of Ophthalmology & Visual Sciences
Illinois Lions/Charles I. Young Chair in Ocular Research
Title: "The Impact of Glaucoma & Diabetic Retinopathy on Vision Related Disability"

November 4, 2013

Daniel Martin, M.D.
Chairman, Cleveland Clinic Cole Eye Institute
Title: "What Have We Learned from the Global Comparative Trials of Avastin & Lucentis?"

December 9, 2013

Paul Sieving, M.D., Ph.D.
Director, National Eye Institute
National Institutes of Health
Title: "NEI Audacious Goals Initiative: Looking to the Future of Vision Research"

January 6, 2014

Roy S. Chuck, M.D., Ph.D.
Chairman, Department of Ophthalmology & Visual Sciences
Paul Henkind Chair and Professor
Albert Einstein College of Medicine
Title: "Ocular Surface Reconstruction Update"

March 10, 2014

Mark Mannis, M.D., F.A.C.S.
Professor and Chairman
Department of Ophthalmology & Vision Science
UC Davis Eye Center
Title: "The Evolution of Surgery for Keratoconus"

April 14, 2014

Paul Lee, M.D., J.D.
F. Bruce Fralick Professor and Chairman
Department of Ophthalmology & Visual Sciences
Director, W.K. Kellogg Eye Center
University of Michigan Health System
Title: "Thoughts of Being a Physician in 2025"

OPHTHALMOLOGY UPDATE

The annual Ophthalmology Update was held February 15-16, 2014 at the Hilton Torrey Pines, La Jolla. The event was a great success with over 300 participants from around the world. Don O. Kikkawa, M.D. and Robert N. Weinreb, M.D. served as Program Co-Chairs. The interdisciplinary faculty of ophthalmic sub-specialties gave presentations on the latest surgical techniques, innovative ideas and research in ophthalmology. The keynote speaker was Gholam Peyman, M.D., Professor in the Department of Optical Sciences at the University of Arizona College of Medicine. Dr. Peyman, inventor of LASIK eye surgery, is a retina specialist and presented "New Diagnostic Technologies."

To start the weekend, a special "Alumni Grand Rounds" was held at the UC San Diego Moores Cancer Center in the Goldberg Auditorium. Alumni presenters included Bishoy Said, M.D., Jose Ivan Quiceno, M.D., and Tara Brown, M.D. The grand rounds were followed by the Stuart I. Brown Lecture delivered by Eytan Z. Blumenthal, M.D., Chairman, Department of Ophthalmology, Rambam Medical Center, Haifa, Israel ("Glaucoma, Ophthalmology and Beyond").



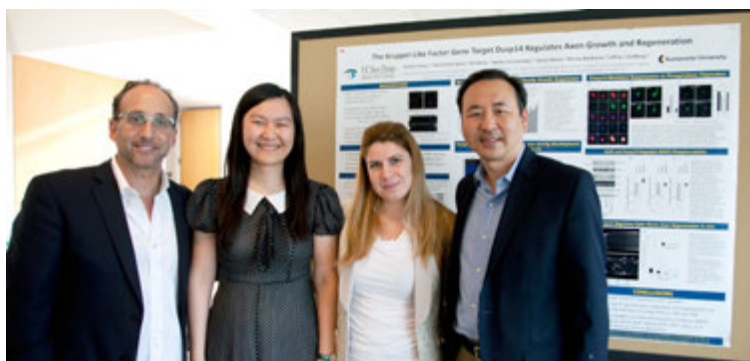
ARVO WRAP UP

After the May 4 – 8, 2014 Annual Meeting of the Association for Research in Vision and Ophthalmology (ARVO) in Orlando, Florida, the Department of Ophthalmology held an ARVO Wrap Up in the Shiley Eye Center Conference Room. The Wrap Up provided an opportunity for medical students, residents, fellows and faculty to hear and view the outstanding research that has been conducted in the Department during 2013-2014 as well as engaging the scientists in discussion about their projects.



(left to right)

Massoud Khraiche, Ph.D., Cheryl Arcinue, M.D., Arash Mozayan, M.D., and Joseph Nezgoda, M.D.



(left to right)

David B. Granet, M.D., Charlotte Gore, M.D., Lilit Minasyan, M.D., and Don O. Kikkawa, M.D.



(left to right)

Robert N. Weinreb, M.D., Shira L. Robbins, M.D., and Natalie A. Afshari, M.D.

RESIDENTS' GRADUATION

On June 16, 2014 the Department of Ophthalmology graduated three senior residents with a ceremony, reception and dinner. The residents are now off to fellowships furthering their ophthalmic studies in California and across the country. Chief resident, Charlotte Gore, M.D. will do a pediatric ophthalmology fellowship at Harvard University/ Boston Children's Hospital; Elizabeth Pinney, M.D. will be at UC Irvine to do a cornea fellowship; and Cristiana Vasile, M.D. will remain here at Shiley in a glaucoma fellowship.



(left to right)

Graduating Residents 2014: Charlotte Gore, M.D., Cristiana Vasile, M.D., and Elizabeth Pinney M.D.



Figure 1

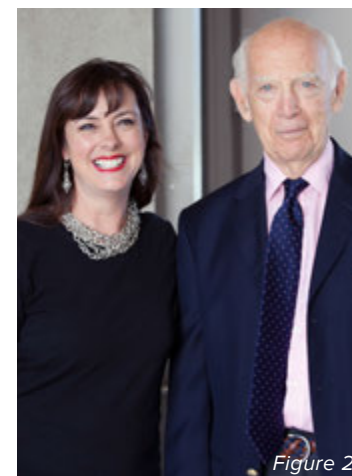


Figure 2

(left to right)

Figure 1: Jeffrey E. Lee, M.D., (Residency Director) with Charlotte Gore, M.D.

(left to right)

Figure 2: Deborah Ericson with Stuart I. Brown, M.D.

During the graduation awards ceremony, the first annual Lamont Ericson, M.D. Award for Outstanding Patient Care by a Resident was given to Charlotte Gore, M.D. The award recipient was selected by the other residents. Dr. Ericson was an outstanding former resident in the Department and passed away in 2007 at a young age. In attendance at the graduation were 26 members of the Ericson family from all over the country. Dr. Ericson's wife, Deborah, presented Charlotte with the award. It was a special afternoon for all.

SHILEY

YEAR IN REVIEW

Shiley Physicians on 2013 US Top Doctors List

Ten of our UCSD Shiley Eye Center and Department of Ophthalmology faculty are featured in the "U.S. News and World Report's" America's Top Doctors 2013 listing. Shiley has more ophthalmologists on this list than any other Department of Ophthalmology in the region and University of California schools.

The "U.S. News and World Report's" Top Doctors directory was developed in collaboration with Castle Connolly Medical Ltd., publisher of America's Top Doctors. Doctors are selected for the listing based on physician surveys. Congratulations to all!

*Natalie Afshari, MD (Cornea & Refractive Surgery)

William Freeman, MD (Retina)

Michael Goldbaum, MD (Retina)

*David Granet, MD (Pediatric Ophthalmology and Strabismus)

Weldon Haw, MD (Cornea & External Diseases)

Christopher Heichel, MD (Cornea & Refractive Surgery)

*Don Kikkawa, MD (Oculoplastics)

Bobby Korn, MD, PhD (Oculoplastics)

*Peter Savino, MD (Neuro-ophthalmology)

*Robert N. Weinreb, MD (Glaucoma)

*This denotes that a doctor in Castle Connolly's estimation is among the top 1% in the nation in their specialty.

NIH Ranking Raised for the Second Consecutive Year

The Blue Ridge Institute for Medical Research has just publicized the national rankings of total NIH (National Institutes of Health) research funding for 2013. We are pleased to announce that the UC San Diego Shiley Eye Center Department of Ophthalmology ranking has risen from #7 to #4 with over \$8 million in NIH grants.

- #1 JOHN HOPKINS UNIVERSITY
- #2 UNIVERSITY OF ILLINOIS
- #3 UNIVERSITY OF PENNSYLVANIA
- #4 UC SAN DIEGO
- #5 OREGON HEALTH & SCIENCE UNIVERSITY

Also noted were the top individual scientists research dollars ranking and Shiley has the following in the top 100 in the country:

- #6 Robert N. Weinreb, MD
- #13 Linda M. Zangwill, PhD
- #33 Jeffrey L. Goldberg, MD, PhD
- #94 William R. Freeman, MD
- #95 Felipe A. Medeiros, MD, PhD
- #99 Radha Ayyagari, PhD

EYEMOBILE



HEARING SCREENINGS

2,771



VISION SCREENINGS

12,238



EYE EXAMS

2,011



FREE GLASSES DISPENSED

1,288



CHILDREN NEEDING MORE
SERIOUS FOLLOW UP CARE

107





PATIENT VISITS
106,470



SURGERIES PERFORMED
4,862



NATIONAL EYE INSTITUTE
GRANTS
29



PEER-REVIEWED
PUBLICATIONS
205



CLINICAL TRIALS
29



PATIENT AGES SPAN FROM
1 **TO** **105**
DAY YEARS

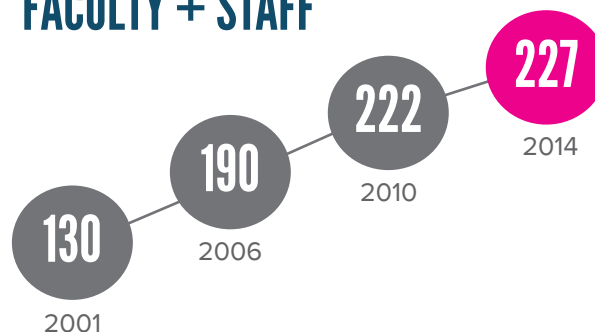


SINCE 1974, SHILEY HAS TRAINED OVER
403 RESIDENTS AND FELLOWS IN
OPHTHALMOLOGY



SHILEY RECEIVED A
\$6.5 MILLION
RESEARCH GIFT

FACULTY + STAFF



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LECTURES

NATALIE A. AFSHARI, M.D.

"Practical IOL Calculations", Ninth Annual
Harvard Medical School Intensive Cataract
Surgery Training Course, Harvard University
Massachusetts Eye and Ear Infirmary, Boston,
MA, June 2013.

"Advances for Corneal Surgery: Implications
for Endothelial Diseases", Larry Piebenga, M.D.
Annual Lectureship, University of Missouri
Kansas City, Kansas City, MO, June 2013.

"Diffuse Lamellar Keratitis", "Postoperative Dry
Eye/Corneal Neuralgia", Lasik Certification
Course, Navy Refractive Surgery Center, San
Diego, CA, June 2013.

"Dry Eye Syndrome and Glaucoma", Glaucoma
Lecture Series, University of California, San
Diego, La Jolla, CA, June 2013.

"Arts & Eyes: What Do the Artists See?", Circle
of Sight Vision Research Lecture, University of
California, San Diego, La Jolla, CA, June 2013.

"A Journey through Cornea from A to Z", Guest
Speaker, Annual Symposium for Residency
Graduation, University of Missouri - Kansas
City, Kansas City, MO, June 2013.

"Secondary Blepharospasm and Dry Eye",
Benign Essential Blepharospasm Research
Foundation Symposium, La Jolla, CA, August
2013.

"IOL Calculations", "Phacodynamics",
"Challenging Cases in Cataract Surgery",
CPE Residents' Program, Dallas Ft. Worth, TX,
September 2013.

"Skewed Vision: What Famous Artists Really

Saw", Group of 12 & Friends Lecture, Sanford
Burnham Medical Research Institute, La Jolla,
CA, September 2013.

"Challenging Cases in IOL Calculations",
"Pearls for DSAEK: The Basics, Complications
Management", Cornea Society Fellows
Educational Summit, Dallas/Fort Worth, TX,
October 2013.

"Lens Insertion and Viscoelastic Removal",
Bausch & Lomb Basic Cataract Surgery Course,
Aliso Viejo, CA, October 2013.

"Genetics of Fuchs Dystrophy: What Do
We Really Know", Cornea Subspecialty Day
2013 and "Corneal Dystrophies", American
Academy of Ophthalmology, New Orleans, LA,
November 2013.

"The Longest Refractive Day", The Annual
Meeting of the International Society of
Refractive Surgery, New Orleans, LA,
November 2013.

"Management of Vitreous for the Anterior
Segment Surgeon" Course Director, American
Academy of Ophthalmology Meeting, Lecture
and Skills Transfer Course, New Orleans LA,
November 2013.

Moderator – "Endothelial Keratoplasty",
Breakfast with the Experts, American Academy
of Ophthalmology, New Orleans, LA, November
2013.

Instructional Course Faculty, American
Academy of Ophthalmology, Current Topics
in Cornea/ External Disease: Highlights of the
Basic and Clinical Science, Course 8, New
Orleans, LA, November 2013.

Panelist – "Cornea Original Paper Session
Panelist (DMEK)" Scientific Papers, American
Academy of Ophthalmology, New Orleans, LA,
November 2013.

"Keratoprostheses: From Blind to 20/20",
Ophthalmic Photographers' Society, New
Orleans, LA, November 2013.

"IOL Calculations", "Challenging Cataract
Cases: Soft Cataracts / Dense Cataracts",
Instructional Course Faculty, Complementary
Ophthalmic Residents Education (CORE)
West Cataract Surgery Course, Carlsbad, CA,
December 2013.

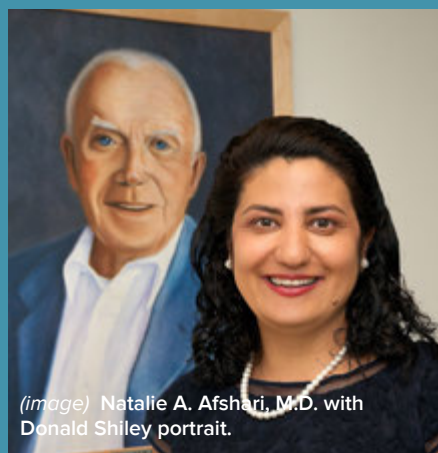
"Complicated Cataract Surgery", Stuart
I. Brown Lecture, Special Alumni Grand
Rounds, Ophthalmology Update, University of
California, San Diego, La Jolla, CA, February
2014.

"Challenging IOL Calculations: What
Would You Do?", "The Nuts and Bolts of
Keratoprosthesis", Ophthalmology Update,
University of California, San Diego, La Jolla,
CA, February 2014.

"New Horizons in Fuchs Genetics", "Quality
of Vision after DSEK vs. PK in Fuchs Corneal
Dystrophy", Invited Faculty Speaker, Tissue
Banks International, The Fourth Fuchs
Dystrophy Symposium, Baltimore, MD, March
2014.

Co-Moderator – Session II: Refractive Surgery:
Screening, Surgery and Beyond, American
Society of Cataract and Refractive Surgery,
Cornea Day 2014, Boston, MA, April 2014.

Chief Judge – Scientific Poster Session,
American Society of Cataract and Refractive



(image) Natalie A. Afshari, M.D. with
Donald Shiley portrait.

Congratulations to Natalie Afshari, M.D.,
who has been awarded the "Women Who
Mean Business Award" by the San Diego
Business Journal. Dr. Afshari is Professor of
Ophthalmology and Chief of the Division of
Cornea and Refractive Surgery. She also is
the inaugural holder of the Stuart I. Brown,
MD Chair in Ophthalmology in Memory of
Donald P. Shiley.

Dr. Afshari is an outstanding clinician,
surgeon and scientist, as well as a
dedicated teacher. She is the author of
more than 100 publications and is co-editor
of an outstanding two-volume cornea
textbook. Dr. Afshari also serves on the
Board of the San Diego Eye Bank and
the Cornea Society, and has performed
charitable surgeries throughout the
world. We are proud of Dr. Afshari and her
outstanding accomplishments.

The entire Shiley team congratulates
her on being named the recipient of this
prestigious award.

Surgery, Boston, MA, April 2014.

“Don’t Forget the Cornea; Remembering the Cornea”, Distinguished Speaker 5th, Annual Managing Glaucoma: Beyond Intraocular Pressure Program, Boston, MA, April 2014.

“Dry Eye Syndrome and Glaucoma”, University of California, San Diego, La Jolla, CA, May 2014.

“Diffuse Lamellar Keratitis”, “Postoperative Infections”, “LASIK Interface Fluid Syndrome”, Navy Refractive Surgery Course: Military Refractive Surgery Safety and Standards Symposium, San Diego, CA, June 2014.

“Practical IOL Calculations”, 10th Annual Harvard Medical School Intensive Cataract Surgery Training Course, Harvard Medical School, Massachusetts Eye and Ear Infirmary, Boston, MA, June 2014.

“New Horizons in Corneal Endothelium and Fuchs Dystrophy: From the Laboratory to the Lane”, Harvard Medical School, Massachusetts Eye and Ear Infirmary, Distinguished Speaker, Boston, MA, June 2014.

“New Horizons in Corneal Endothelium and Fuchs Dystrophy – Surgical Interventions, Cell Therapy & Genetics”, Association of Proctor Fellows Meeting and Graduation Retreat, Richard O’Connor Lecture, University of California, San Francisco, San Francisco, CA, June 2014.

“Corneal Transplants, Flaps, Lasers, Bubbles: Recent Advances in Cornea and Refractive Surgery”, Claude L. Cowan, Sr. M.D. Lecturer, National Medical Association Ophthalmology Section, Honolulu, HI, August 2014.

“What You Need to Know About Fuchs Corneal Dystrophy”, National Medical Association Ophthalmology Section, Honolulu, HI, August 2014.

RADHA AYYAGARI, PH.D.

“Genetics of Glaucoma”, Hamilton Glaucoma Center Lecture Series, University of California, San Diego, La Jolla, CA, Spring 2013.

“Genomics in Medicine”, Course to First Year Medical Students, University of California, San Diego, La Jolla, CA, Fall 2013.

“Understanding the Molecular Basis of RD in the Era of NGS”, Symposium on Retinal Degenerations, Low Vision & Rehabilitation Asia ARVO, New Delhi, India, October 2013.

“Studying Molecular Pathology Underlying RD Using Animal Models”, Symposium on Animal Models in Eye Research, Asia ARVO, New Delhi, India, October 2013.

“What Everyone Needs to Know About Genetics”, Glaucoma Lecture Series, University of California, San Diego, La Jolla, CA, May 2014.

“Exome Sequence Analysis”, “Variant Filtering and Prioritizing Strategies to Identify Disease Causing Mutations”, “Genetics Group Symposium on Exomes and Eye Diseases: Challenges and Successes”, ARVO Annual Meeting, Orlando, FL, May 2014.

“Update on Molecular Diagnostic Testing for Retinal Degenerations”, VISIONS Symposium Organized by the Foundation Fighting Blindness, Denver, CO, June 2014.

“Understanding the Molecular Basis of RD by Exome Analysis”, Symposium on Retinal Degeneration Genetics and Mechanisms, International Society for Eye Research, San Francisco, CA, July 2014.

CHRISTOPHER BOWD, PH.D.

“Glaucoma Progression Detection Using Variational Expectation Maximization Algorithm”, International Symposium on Biomedical Imaging: From Nano to Macro, San Francisco, CA, April 2013.

“A One-Class Bayesian-Kernel Classifier for Glaucoma Progression Detection Applied to 3-D Spectral Domain Optical Coherence Tomography Optic Nerve Head Images”, Annual Conference of the International Society for Imaging in the Eye, Seattle, WA, May 2013.

“Introduction to OCT Technology for Glaucoma” and “Novel Analysis Techniques for Detecting Visual Field Change”, 5th World Glaucoma Congress, Vancouver, B.C., Canada, July 2013.

“Combining Bayesian and Machine Learning Strategies for Glaucoma Progression Detection: Application to HRT and SDOCT Images”, Meeting of the Glaucoma Progression Scholars, Chapel Hill, NC, October 2013.

“A Joint Estimation Detection of Glaucoma Progression in 3-D Spectral Domain Optical Coherence Tomography Optic Nerve Head Images” and “Recognizing Patterns of Visual Field Loss Using Unsupervised Machine Learning”, SPIE Medical Imaging 2014, San Diego, CA, February 2014.

“Measurement of BMO Plane-Based Anterior Lamina Cribrosa Surface Depth (ALCSD) Parameters Using a Deconvolution Approach Applied to 3-D Spectral Domain Optical Coherence Tomograph Optic Nerve Head Images”, ARVO, ISIE/Imaging Conference, Orlando, FL, May 2014.

“Automated Identification of Schlemm’s Canal and Collector Channels from Spectral Domain Optical Coherence Tomography Images”, ARVO, ISIE/Imaging Conference, Orlando, FL, May 2014.

LINGYUN CHENG, M.D.

“Formulation Study Advancement and Breakthrough for Transscleral Drug Delivery for Fundus Diseases”, 6th Chinese Congress of Research in Vision and Ophthalmology (CCRVO), Beijing University, Beijing, China, March 2014.

NAPOLEONE FERRARA, M.D.

Keynote Speaker - Peking University-Bio Symposium, La Jolla, CA, July 2013.

“Role of the Microenvironment in Tumor Angiogenesis”, Gordon Research Conference, Newport, RI, August 2013.

Keynote Speaker – “Anti-Angiogenic Therapy: New Insights”, 11th Congress of the European Association for Clinical Pharmacology and Therapeutics, Geneva, Switzerland, August 2013.

“Therapeutic Use of VEGF-inhibition”, 13th Euretina Congress, Hamburg, Germany, September 2013.

“Anti-Angiogenic Therapy: from Bench to Clinic”, Klaus Hofmann Lecture, University of Pittsburgh School of Medicine, Pittsburgh, PA, October 2013.

7th Annual Frontiers of Clinical Investigation Symposium, La Jolla, CA, November 2013.

Sino-U.S. Conference on Medicine in the 21st Century, Shanghai, China, November 2013.

Guangdong International Forum of Ophthalmology (Keynote talk). Guangzhou, China, January 2014.

16th International Symposium on Anti-Angiogenic Agents, La Jolla, CA, February 2014.

Priscilla White Lectureship, Joslin Diabetes Center-Brigham and Women Hospital, Boston, MA, February 2014.

“Angiogenesis: Basic and Translational Aspects”, 87th Annual Meeting, Japanese Pharmacological Society, Sendai, Japan, March 2014.

Keynote Speaker – Inaugural University

of California, San Diego MSTP Research Symposium, La Jolla, CA, March 2014.

International Forum on Antiangiogenic Therapy, Shanghai, China, April 2014.

18th International Vascular Biology Meeting (IVBM), Kyoto, Japan, April 2014.

Lasker APSA Lecture, Chicago, IL, April 2014.

Progress in the Science of Medicine (PRISM) Lecture, La Jolla, CA, May 2014.

Anti-Angiogenesis Symposium, Kyoto, Japan, September 2014.

Chugai Anti-Angiogenesis Forum, Tokyo, Japan, September 2014.

Gairdner Symposium, Toronto, Canada, October 2014.

WILLIAM R. FREEMAN, M.D.

“Navigated Laser on Threshold Macular Thickness for the Treatment of Center-Involved Diabetic Macular Edema (DME): 12-Month Results”, 46th Annual Retina Society Meeting, Beverly Hills, CA, September 2013.

“Update on Wet AMD Therapy”, New York Eye and Ear Infirmary, New York, NY, February 2014.

“New Imaging Modalities for the Retina Including Adaptive Optics, Photoreceptor Imaging and Oral Angiography”, “Drug Delivery Systems for Retinal Disease. Update on Ozurdex, Triamcinolone, Flucinolone and Experimental Nanocrystal Drug Delivery”, “New Advances in AMD Drugs: Initial Eylea Experience, Fovista, New Treatments for Geographic Atrophy”, “Update on Retinal Prosthesis Including Second Sight Prosthesis Results and New Progress with Other Approaches Including the UC San Diego Nanovision Prosthesis”, 5th Annual Congress

of Ophthalmology, Fundacion Oftalmologica Nacional, Cartagena, Colombia, March 2014.

“Multicolor Imaging Compared with Color Fundus Photography for Retinal, Choroidal and Optic Nerve Pathology”, “Noncontact Ultra-Wide Field Lens System by Heidelberg Spectralis”, “Evaluation of a High Density Photovoltaic Prosthesis in Rabbits”, “High Density Flexible Optoelectronic Platform for Retinal Prosthesis”, “Cross-Sectional Analysis of Structural and Functional Parameter in Patients with HIV and Normal Controls”, “Visual Phenomenon Perceived During Vitrectomy Surgery with MAC Anesthesia”, “Combined Depth Imaging (CDI) Technique on Heidelberg Spectralis versus Topcon DRI Swept Source (SS) OCT in Full-Depth Visualization of Macular Structures”, “Hyper-Autofluorescent Ring in Neovascular Age-Related Macular Degeneration”, “Six-Month Outcomes of Aflibercept in Recurrent or Persistent Neovascular Age-Related Macular Degeneration”, “Real-Time Non-Invasive Monitoring of Intravitreal Drug Release from Porous Silicon (Psi) by Digital Camera”, “Porous Silicon Microparticles Covalently Loaded With Dexamethasone For Intravitreal Injection”. The Association for Research in Vision and Ophthalmology (ARVO) Annual Meeting, Orlando, FL, May 2014.

“A Nano-Engineered Light-Sensitive Retinal Prosthesis”, American Society of Retina Specialists, Chicago, IL, August 2014.

MICHAEL H. GOLDBAUM, M.D.

“Traumatic Partial Avulsion of the Optic Nerve” and “Acute Macular Neuroretinitis”, Midwest Ocular Angiography Conference, St. Andrews, Scotland, August 2013.

“Pneumatic Retinopexy”, EURETINA, Hamburg, Germany, September 2013.

“Pneumatic Retinopexy”, “Diabetic Retinopathy, Laser Coagulation: When and How to Do It”, Meeting of the Ophthalmological Society of Samara, Russia, November 2013. “Diabetic Retinopathy, Laser Photocoagulation: How and When to Do It”, “Age-related Macular

Degeneration; Current Treatment Options”, East-West 2014, Ufa, Russia, June 2014.

JEFFREY GOLDBERG, M.D.

“Stem Cells for Glaucoma”, Society for Brain Mapping and Therapeutics, Baltimore, MD, May 2013.

“Optic Nerve Regeneration and Neuroprotection”, Invited Faculty, Fox Center/UPMC Meeting, Vision Restoration: Regenerative Medicine in Ophthalmology, Pittsburgh, PA, June 2013.

“Anti-Glaucoma Medications Beyond IOP” and “Retinal Ganglion Cells in Glaucoma: Bench to Bedside”, Invited Faculty, World Glaucoma Congress, Vancouver, Canada, July 2013.

“Retinal Ganglion Cells in Glaucoma: Bench to Bedside”, Daniel Scott Weston Lecture, Glaucoma Research Foundation, Palo Alto, CA, November 2013.

“Stem Cells and Nanotherapeutics in Glaucoma”, “Neuroprotection and Regeneration of Retinal Ganglion Cells”, Invited Lecturer, Optometric Glaucoma Association; “The Future of Glaucoma Therapy: Protecting and Regenerating”, OGS/AAO Joint Symposium, Seattle, WA, November 2013.

Plenary Session Lecture, “Stem Cells for Glaucoma” and Invited Lecture, “The Case for Neuroprotection Trials in Glaucoma”, American Academy of Optometry, Seattle, WA, November 2013.

Heed Resident Retreat, Invited Faculty, Chicago, IL, November 2013.

“Regenerative Ophthalmology for Glaucoma”, “Genetics of Glaucoma: What? Why?”, Latin American Glaucoma Specialists Meeting, Invited Faculty, University of California, San Diego, La Jolla, CA, January 2014.

“Novel Rescue Approaches”, Invited Faculty, American Glaucoma Society, Washington, D.C., February 2014.

“Regenerative Ophthalmology for Glaucoma”, Invited Faculty, Asian Glaucoma Specialists Meeting, University of California, San Diego, La Jolla, CA, March 2014.

“Neural Regeneration in Glaucoma”, Invited Faculty, World Ophthalmology Congress, Tokyo, April 2014.

“Axon Regeneration: Transcriptional Regulation by KLFs”, Invited Speaker, Neurosciences Program Retreat, University of California, San Diego, La Jolla, CA, May 2014.

“Axon Regeneration: Connecting Intrinsic and Extrinsic Regulation”, Vision Research Seminar Series, Tufts University Department of Ophthalmology, Boston, MA, June 2014.

“Stem Cells for Glaucoma”, Invited Faculty, Fox Center/UPMC Meeting, Vision Restoration: Regenerative Medicine in Ophthalmology, Pittsburgh, PA, June 2014.

“Transitioning Regenerative Therapies from the Bench to the Clinic”, Invited Faculty, International Society for Eye Research Bi-Annual Meeting, San Francisco, CA, July 2014.

DAVID B. GRANET, M.D.

“Reading and Learning”, Invited Speaker, Teachers of the Visually Impaired and Deaf & Hard of Hearing Program, South Bay Union School District, Chula Vista, CA, May 2013.

“Restrictive Strabismus: Thyroid”, Invited International Speaker, The 15th National Congress of Pediatric Ophthalmology & Strabismus, Chinese Ophthalmological Society, Tianjin, China, June 2013.

“Sports Eye Protection”, Invited International Speaker, American Eye Study Club (AESC)

Annual Meeting, Nassau, Bahamas, July 2013.

“Visual Rehabilitation of the Child with JIA”, “Video Update”, Invited International Speaker, European Paediatric Ophthalmological Society/ World Society of Paediatric Ophthalmology & Strabismus, Netherlands, October 2013.

“Latest Possibilities of Amblyopia Treatment”, “Myopia Controversies”, Invited International Speaker, 3rd International Conference “Ophthalmology-Controversies”, Wroclaw, Poland, October 2013.

“WSPOS Symposium: Pediatric Cataract and Exotropia”, Invited International Speaker, 9th International Symposium of Ophthalmology, Guangzhou, China, November 2013.

“Pediatric Ophthalmology 2013: Preparing for the Next Generation”, “Pediatric Ophthalmology 2013: Low-Tech In-Office imaging”, Invited Speaker, AAO Annual Meeting, New Orleans, LA, November 2013.

“Thyroid”, “Adjustable Sutures”, “Nystagmus”, “Video Potpourri”, Invited Speaker, The Australian and New Zealand Strabismus Society Annual Scientific Meeting, Sydney, Australia, March 2014.

“New Advances in Adjustable Suture Strabismus Surgery”, “Reading & Learning: Do the Eyes Have It?”, “Adult Strabismus Surgery”, “Muscling in on Refractive Surgery”, Invited Speaker; “The Ethics of Ophthalmic Surgery: Innovation, Teaching and the Patient’s Best Interest”, “Strabismus, a Roundtable Discussion”, Invited Panelist, New Orleans Academy of Ophthalmology 63rd Annual Symposium, New Orleans, LA, March 2014.

“Special Techniques in Strabismus Surgery”, The William Gillies Lecturer, The Australian and New Zealand Strabismus Society Annual Scientific Meeting; Sydney, Australia, March 2014.

Everything You Wanted to Know about Ophthalmology but Were Afraid to Ask: Cases from the AAP Challenging Cases Series”, Invited Speaker, American Academy of Pediatrics National Conference & Exhibition, San Diego, CA, October 2014.

Adjustable Sutures in Adult Strabismus”, “Genetic Eye Disease” Invited Panelist, European Society of Cataract & Refractive Surgeons (ESCRS) Congress Meeting, London, England, September 2014

Evolution of a Revolutionary Organization”, Invited Speaker, American Eye Study Club (AESC) Annual Meeting, Vail, CO, July 2014.

Retinoscopy and Refractions”, Invited Speaker, University of California, San Diego, La Jolla, CA, July 2014.

WELDON HAW, M.D.

“Cataract Surgery Technique”, “Complicated Cataract Surgery – Advanced Techniques”, Continuing Professional Education, Review of Ophthalmology and Alcon, Dallas-Fort Worth, TX, August 2013.

“Cataract & Astigmatism in the Era of Toric Intraocular Lenses”, “Surgical Video Grand Rounds – Complicated Cataract Surgery”, Moderator and Invited Lecturer- Cataract Surgery Section, Ophthalmology Update 2014: New Approaches to Medical and Surgical Therapies, La Jolla, CA, February 2014.

Instructor - AMO Cataract Surgery Wet Laboratory Course, La Jolla, CA, August 2014.

“Inflammation Disorders of the Anterior Segment”, University of California, San Diego, La Jolla, CA, September 2014.

CHRISTOPHER W. HEICHEL, M.D.

“Update in Corneal Surgery”, University of California, San Diego, La Jolla, CA, January 2014.

“Selecting the Right Candidate for Multifocal Lenses”, Ophthalmology Update, La Jolla, CA, February 2014.

ANDREW D. HUBERMAN, PH.D.

University of California, San Francisco, Department of Ophthalmology, San Francisco, CA, January 2014.

“Cell Types and Trans-Aynaptic Circuits for Processing Directional Motion”, ARVO Symposium on Direction Selectivity, Orlando, FL, May 2014.

“Regenerating Functionally Specific Visual Circuits”, University of Miami, Neuroscience Seminar Series, Miami, FL, May 2014.

“What are Direction Selective Retinal Ganglion Cells Used For?”, FASEB: Retina and Visual Processing, Saxton’s River, VT, June 2014.

“Genetic Dissection of Parallel Visual Pathway Structure, Function and Assembly”, International Society for Developmental Neurobiology, Montreal, Canada, July 2014.

“Parsing Multi-Synaptic Circuits for Processing Directional Motion”, Janelia Farm/Howard Hughes Medical Institute, Signal Transforms in the Early Visual System, Ashburn, VA, September 2014.

WON-KYU JU, PH.D.

“Mitochondria as Potential Target after Acute Ischemia” 11th Edition of Kidney Transplantation, Aula Scarpa, University of Pavia, Pavia, Italy, 2013.

“Blocking Excitotoxicity Triggers Mitochondrial Biogenesis in Glaucomatous Optic Nerve Head Astrocyte”, Vision Research Lecture, University of California, San Diego, La Jolla, CA, March 2014.

MASSOUD KHRAICHE, PH.D.

“Optoelectronic Silicon Nanowires for High-

Resolution Neurostimulation in Vivo and in Vitro”, Annual Meeting of the Society of Neuroscience, San Diego, CA, November 2013.

“Retinal Prosthesis”, Invited Lecture, Arizona State University, Phoenix, AZ November 2013.

“Functional and Histological Evaluation of a High-Density Optoelectronic Nanowires in Rabbits”, 15th Annual UC Bioengineering Symposium, Systems Biology, Neurobiology, Synthetic Biology in Engineering Session, Irvine, CA, June 2014.

DON O. KIKKAWA, M.D.

“Transconjunctival Fat Repositioning Solves Most of Her Issues Simply and Safely”, Oculofacial Plastic Surgery Subspecialty Day, AAO Annual Meeting, New Orleans, LA, November 2013.

“Periorbital Aging: A Global Perspective”, Multi-Specialty Plastic Surgery Symposium, Cedars Sinai, Los Angeles, CA, November 2013.

“Socket Reconstruction: Trials and Tribulations”, AD Ruedemann Lecture, AAO New Orleans, LA, November 2013.

“Eyelid Reconstruction”, 1st Meeting of the Japanese Society of Ophthalmic Plastic and Reconstructive Surgery, Nagoya, Japan, December 2013.

“How to Improve Your Results in Eyelid Surgery” Minnesota Academy of Ophthalmology, Minneapolis, MN, February 2014.

“Revision Blepharoplasty”, “Midface and Lower Lid Blepharoplasty Panel”, The Aging Face, AAFPRS, San Diego, CA, February 2014.

“Multidisciplinary Treatment of Thyroid Eye Disease”, Jonathan Wirtschafter Lecture, University of Minnesota, Minneapolis, MN, February 2014.

“The Art and Science of Orbital Surgery,” Randy Campo Lecture, Bascom Palmer Eye Institute, Miami, FL, April 2014.

“Challenging Eyelid Tumor Cases”, “Orbital Foreign Bodies: Leave Them In or Take Them Out?”, Moderator, Session on “Asian Eyelid Surgery”, World Ophthalmology Congress, Tokyo, Japan, April 2014.

“Ptosis, Thyroid Eye Disease and Endoscopic Surgery” Stein Day Lecture, “Strategies in Contracted Socket Management”, “Complications of Blepharoplasty”, “How to Achieve Your Best Results in Blepharoplasty”, “Volume-When To Add And When To Subtract”, “Lessons Learned in Orbital Reconstruction”, Goldscheleger Eye Institute, Sheba Medical Center-Tel Hashomer, Tel Aviv, Israel, April/May 2014.

“Multidisciplinary Treatment of Thyroid Related Orbitopathy”, “Strategies in Microphthalmos Treatment”, 3rd Chinese National Congress of Ophthalmic Plastic Surgery and Orbital Disease, Nanchang, China, May 2014.

“The Failed DCR: What Next?”, “Strategies in Dealing with the Contracted Socket”, “Anatomic and Cultural Differences in Asian Blepharoplasty” “Customizing Orbital Reconstruction”, Asean Ophthalmological Society, Bangkok, Thailand, July 2014.

“Lower Lid Blepharoplasty and Midface Surgery”, “Upper Lacrimal System Problems”, “Enucleation, Evisceration and Exenteration” and “Lessons Learned on Orbital Fracture Repair and Reconstruction”, 2nd International Training Course Masters Technique in Ophthalmic Plastic and Reconstructive Surgery, Bumrungrad International Hospital, Bangkok, Thailand, July 2014.

BOBBY KORN, M.D., PH.D.

“Flap Techniques and Eyelid Reconstructions”, Invited Speaker, Grand Rounds, Department of Ophthalmology, Vanderbilt University, October 2013.

“Lower Eyelid Bags: Excise or Refill”, “Lacrimal Surgery”, “Eyelid Reconstructions”, and “Optimizing Brow Ptosis Repair”, 16th Ophthalmology Congress of the University of Sao Paulo, Sao Paulo, Brazil, November 2013.

“Relevant Anatomy in Treating Blepharospasm”, Annual Meeting of the Benign Essential Blepharospasm Research Foundation (BEBRF), San Diego, CA, August 2013.

“External Ptosis Repair”, “External Lower Lid Blepharoplasty”, Invited Speaker, Master Techniques in Peri-Orbital Aesthetic Surgery, St. Louis University School of Medicine, St. Louis, MO, February 2014.

“Tips for Blepharoplasty Success”, Invited Speaker, Ophthalmology Update 2014: New Approaches to Medial and Surgical Therapies, San Diego, CA, February 2014.

“Management of Epiblepharon” and “Dermis Fat Grafting in the Anophthalmic Socket”, Invited Speaker, Asia Pacific Academy of Ophthalmology, Tokyo, Japan, April 2014.

“Thyroid Eyelid Retraction Repair”, “Thyroid Orbital Decompression”, “Endoscopic Conjunctival Dacryocystorhinostomy”, “Surgical Approaches to the Orbit”, “Ptosis Repair”, “Upper Eyelid Blepharoplasty”, Invited Speaker, Master Techniques in Ophthalmic Plastic and Reconstructive Surgery, 2nd International Training Course, Bumrungrad International Hospital, Bangkok, Thailand, July 2014.

“Surgical Approaches to the Orbit”, “Pearls for Endoscopic Lacrimal Surgery”, “Use of Dermis Fat Grafting in the Anophthalmic Socket”, and “Non-surgical rejuvenation”, Invited Speaker, First Congress of the Asean Ophthalmology Society, Bangkok, Thailand, July 2014.

“Complex Eyelid Reconstructions”, Facial Plastic and Reconstructive Surgery Resident Core Lecture Series, University of California, San Diego, Division of Head and Neck Surgery,

La Jolla, CA, July 2014.

JEFF LEE, M.D.

“Ophthalmologic Principles and Syndromes”, “Ophthalmologic Case Presentation: It’s Not that Big of a Deal”, “Ophthalmologic Disorders”, University of California, San Diego MBB2 Medical School Core Curriculum Year 2, La Jolla, CA, January 2013.

“Basics of Cataract Surgery”, Basic Cataract Surgery Course, University of California, San Diego, La Jolla, CA, July 2013.

“Introduction for Ocular Emergencies”, University of California, San Diego Department of Ophthalmology, La Jolla, CA, July 2013.

New Resident Orientation, University of California, San Diego, La Jolla, CA, July 2013.

“Interesting Cases from an Inpatient Ophthalmology Service”, San Diego Eye Bank Technicians Conference, San Diego, CA, August 2013.

“Divide and Conquer, Basic Cataract Surgery Course II”, University of California, San Diego Department of Ophthalmology, La Jolla, CA, September 2013.

“Interesting Cases from an Inpatient Ophthalmology Service”, Ophthalmology Update, La Jolla, CA, February 2014.

“Basics of Cataract Surgery”, Course Director, Basic Cataract Surgery Course, University of California, San Diego, La Jolla, CA, July 2014.

JONATHAN H. LIN, M.D., PH.D.

“Endoplasmic Reticulum Stress in Eye Diseases”, Genentech/Roche Department of Immunology, South San Francisco, CA, 2013.

“Endoplasmic Reticulum Stress in Disease

Pathogenesis and Progression”, Invited Speaker, American Society for Investigative Pathology/Experimental Biology, Ramzi Cotran Lecture, Boston, MA, 2013.

“Pigmented Lesions of the Eye: Uveal Melanoma and Primary Acquired Melanosis”, Invited Speaker, American Society for Clinical Pathology, Chicago, IL, 2013.

“Eye Pathology for Comprehensive Ophthalmology”, Ophthalmology Update, La Jolla, CA, February 2014.

“Mechanisms of Protein Misfolding-Induced Cell Death”, Invited Speaker, Case Western Reserve University School of Medicine, Department of Physiology and Biophysics, Cleveland, OH, 2014.

“Mechanisms of Cell Death”, Mini-Symposium Speaker, American Society for Investigative Pathology, San Diego, CA, 2014.

“ER and Oxidative Stress in Ocular Disease”, Mini-Symposium Speaker, International Society for Eye Research, San Francisco, CA, 2014.

JOHN H.K. LIU, PH.D.

“24-Hour Efficacy of Glaucoma Medication”, 9th International Symposium of Ophthalmology, Guangzhou, China, November 2013.

“Recent Discovery of Vision Problems in American Astronauts”, National Chiao Tung University, Department of Electrical Engineering, Hsinchu, Taiwan, April 2014.

“24-Hour Efficacy of Glaucoma Medication and Its Clinical Implications”, Taipei Glaucoma Symposium, Taipei, Taiwan, April 2014.

“Present and Future Contact Lens Sensors for Monitoring Intraocular Pressure”, ROC Ophthalmology Society 49th Regional Meeting, Glaucoma Symposium, Taichung, Taiwan, April

2014.

“Efficacy of Latanoprostene Bunod Ophthalmic Solution 0.024% Compared with Timolol Maleate Ophthalmic Solution 0.5% in Lowering IOP over 24 Hours in Subjects with Open Angle Glaucoma or Ocular Hypertension” (CONSTELLATION) ARVO annual meeting, Orlando, FL, May 2014.

“Gravitational Fluid Shifts in Glaucoma Patients”, 85th Aerospace Medical Association Meeting, San Diego, CA, May 2014.

FELIPE A. MEDEIROS, M.D., PH.D.

Keynote Speaker – “The Future of Glaucoma”, “What Can We Learn From Counting Ganglion Cells”, “New Perspectives on 24hr IOP Measurements”, “Corneal Biomechanics in Glaucoma”, South African Glaucoma Congress, George, South Africa, May 2013.

Keynote Speaker – “The 10 Commandments of Glaucoma”, 46 Reunion Annual Sociedad Dominicana de Oftalmologia, Punta Cana, Dominican Republic, June 2013.

Keynote Speaker – “Detecting Glaucoma Progression: A Paradigm Shift”, “Advances in 24hr IOP Measurement”, “Let’s Get Real: Testing What Really Matters in Glaucoma”, IV Congreso Sociedad Iberoamericana de Glaucoma, Punta Cana, Dominican Republic, June 2013.

“Innovations in Risk Assessment for Glaucoma Patients”, “Detecting Glaucoma Progression in Clinical Practice”, “Continuous 24hr IOP Measurement,” 41st Annual Ophthalmology Alumni Meeting, SUNY Downstate Medical Center, New York, NY, June 2013.

“Biomarkers and Surrogate Endpoints in Glaucoma”, “Should IOP Be Lowered When the Only Measured Abnormality Is RNFL Thinning on Optic Nerve Imaging?”, “Combining Structure and Function for Detection of Glaucoma Progression”, “Current Challenges

in Glaucoma Clinical Research,” 5th World Glaucoma Symposium; Chair, Imaging Technologies Symposium, Vancouver, Canada, July 2013.

ERIC NUDELMAN, M.D., PH.D.

“Long-Term Outcomes of Lens Clarity Following Lens-Sparing Vitrectomy for Retinopathy of Prematurity”, 2013 ARVO Annual Meeting, Seattle, WA, May 2013.

“Worsening of Macular Edema after Aflibercept Injection for Exudative ARMD in Eyes Previously Well Controlled with Ranibizumab”, American Society of Retina Specialists Toronto, Canada, August 2013.

SHIRA L. ROBBINS, M.D.

“Vision Screening in Young Children”, Child Health and Disability Prevention Program, US Department of Health & Human Services, San Diego, CA, June 2013.

“Different Perspectives on Thyroid Eye Disease”, Women in Ophthalmology 2013 Annual Meeting, Snowmass, CO, August 2013.

“Vision Screening in Young Children”, Child Health and Disability Prevention Program, US Department of Health & Human Services, San Diego, CA, November 2013.

“Functional MRI in Pediatric Ophthalmology”, American Academy of Ophthalmology, New Orleans, LA, November 2013.

“Five New Things the Comprehensive Ophthalmologist Should Know About Pediatric Ophthalmology”, Ophthalmology Update, La Jolla, CA, February 2014.

“Effecting Blindness: A 360-Degree Research Program for Retinopathy of Prematurity”, University of Pittsburgh Medical Center, Pittsburgh, PA, March 2014.

“Miracles Happen: Retinopathy of Prematurity,”

NICU Nurses, University of California, San Diego - Hillcrest, San Diego, CA, March 2014.

“Delivering Bad News: The Missing Piece in Residency Education”, Leonard Apt Meeting, University of California, Los Angeles, Los Angeles, CA, April 2014.

“Pearls for an Efficient Pediatric Ophthalmology Clinic”, Director, Moderator, and Speaker, American Association of Pediatric Ophthalmology & Strabismus Annual Meeting, Palm Desert, CA, April 2014.

“Vision Screening in Young Children”, Child Health and Disability Prevention Program, US Department of Health & Human Services, San Diego, CA, May 2014.

“Pediatric Ophthalmology for the Family Medicine Physician”, Family Medicine Residents and Attendings, University of California, San Diego, La Jolla, CA, June 2014.

“Stopping Blindness – One Baby at a Time”, Circle of Sight, University of California, San Diego, La Jolla, CA, June 2014.

“Retinopathy of Prematurity,” University of California, San Diego - Hillcrest, CA, July 2014.

PETER J. SAVINO, M.D.

5th Annual Benign Essential Blepharospasm Research Foundation Meeting, Organizer and Moderator, University of California, San Diego, La Jolla, CA, August 2013.

“Giant Cell Arteritis”, “Pseudotumor Cerebri”, Departments of Neurology and Ophthalmology, Visiting Professor, University of Melbourne at the Royal Melbourne Hospital, Melbourne, Australia, October/November 2013.

Case Presentations, Neuro-ophthalmology Symposium, Invited Guest Participant, Melbourne Brain Centre at University of Melbourne, Melbourne, Australia, October 2013.

“Challenging Cases in Neuro-Ophthalmology”, Invited Speaker, Royal Victoria Eye and Ear Hospital, Melbourne, Australia, October 2013.

“Giant Cell Arteritis”, Invited Guest Speaker, Grand Rounds, Royal Melbourne Hospital, Melbourne, Australia, October 2013.

“Pseudotumor Cerebri” Case Presentation Course, Invited Guest Speaker, 45th Annual Scientific Congress, The Royal Australian and New Zealand College of Ophthalmologists, Hobart, Tasmania, November 2013.

“Hononymous Hemianopias”, “OCT in Neuro-Ophthalmology”, Invited Guest Speaker, Confluence Eye and Beyond, International Master Course, Hyderabad, India, December 2013.

“Neuro-Ophthalmologic Aspects of Skull Base Disease”, Invited Guest Speaker, 24th Annual Meeting, North American Skull Base Society, La Jolla, CA, February 2014.

“When to Image Normal Tension Glaucoma”, Invited Guest Speaker, Ophthalmology Update 2014, La Jolla, CA, February 2014.

“The Neurologists’ Role in Pseudotumor Cerebri”, Invited Guest Speaker, Department of Neurosciences, University of California, San Diego, La Jolla, CA, June 2014.

GABRIEL A. SILVA, M.D.

“Nanotechnology Approaches for Neurostimulation and Restoring Function”, Invited Speaker, Graduate Program in Neurosciences, University of Minnesota, Minneapolis, MN April 2013.

“A Roadmap for Translational Nanomaterials and Technologies Aimed at Restoring Neurological Function”, Invited Speaker, BioCom 2013, Perth, Australia, October 2013.

“High Density Optoelectronic Nanowire Array Selective Stimulation of the Neural Retina: Comparison with Other Neural Stimulation

Technologies”, Society for Neuroscience, San Diego, CA, November 2013.

“Graph Theoretic Methods for Descriptive and Predictive Analyses of Cellular Neural Network Dynamics”, Winter School on Neuromorphic Engineering: Dynamics of Multifunction Brain Networks, La Jolla, CA, January 2014.

“Integrating Computational Neuroscience, Algorithms, and Neurotechnologies for Restoring Neural Function”, American Society of Experimental Neurotherapeutics (ASENT): Science Nonfiction in Neurotherapeutics, Bethesda, MD, February 2014.

“Neuromimetic Algorithms Derived from Neural Dynamics and Signaling in the Brain”, Hughes Research Laboratories, Malibu, CA, July 2014.

ROBERT N. WEINREB, M.D.

“The Case for Angle Surgery”, Fred C. Williams, M.D. Memorial Lecture, 54th Annual Scientific Meeting of Frederick C. Cordes Eye Society, University of California, San Francisco, San Francisco, CA, 2013.

“Educating Today the Educators of Tomorrow”, Universidade de Sao Paulo Distinguished Faculty Medal Lecture, Sao Paulo, Brazil, 2013.

“Personalizing Intraocular Pressure to Manage Glaucoma”, Innaugural Drs. Henry and Frederick Sutro Memorial Lecture, Glaucoma Research Foundation, San Francisco, CA, 2014.

“Glaucoma 2014”, “How I Detect High Risk Patients”, “How I Manage My Glaucoma Service”, Annual Congress of Royal College of Ophthalmologists, Birmingham, England, 2014.

“Angle Surgery for Glaucoma”, World Ophthalmology Congress, Tokyo Japan, 2014.

“Monitoring Glaucoma Progression” and “Angle Surgery”, Guest of Honor, Annual Meeting of Canadian Ophthalmological Society, Halifax, Nova Scotia 2014.

“Glaucoma Beyond the Eye”, Beyond IOP, Harvard Club, Boston, MA, 2014.

“What is next for glaucoma?”, Plenary Lecture – 19th Congress of Chinese Ophthalmological Society, Xi’an, China, 2014.

“24 hour IOP to personalize glaucoma management”, International Award Lecture, 2nd Asia-Pacific Glaucoma Congress, Hong Kong, 2014.

“Glaucoma Neuroprotection”, American Academy of Ophthalmology, Subspecialty Day, Chicago, IL, 2014

“What is Next for Glaucoma?”, 68th Annual Congress of Japan, Clinical Ophthalmology, Kobe, Japan, 2014.

SIAMAK YOUSEFI, PH.D.

“Automated Identification of Schlemm’s Canal and Collector Channels from Spectral Domain Optical Coherence Tomography Images”, ISIE/ARVO, Orlando, FL, May 2014.

“Quadratic Bayesian Pattern Detection for Detecting Glaucomatous Change in Follow-Up SD-OCT RNFL Thickness Measurements”, ARVO, Seattle, WA, May 2013.

LINDA ZANGWILL, PH.D.

“Assessment of Structural Damage and Progression”, Consejo Mexicano De Oftalmologia, Colegio Mexicano de Glaucoma, Acapulco, Mexico, May 2013.

“New Ideas in Structure-Function Mapping”, American Optometric Society Annual Meeting, San Diego, CA, June 2013.

“Comparing the Rate of Rim Area Change in Eyes with Visual Field and Optic Disc Endpoints: The Confocal Scanning Laser Ophthalmoscopy Ancillary Study to the Ocular Hypertension Treatment Study”, World Glaucoma Congress, Vancouver, Canada, July 2013.

“Should We Have a Normative Database Based on Ethnicity?”, World Glaucoma Congress, Vancouver, Canada, July 2013.

“Assessing Structural Change in Glaucoma”, Women in Ophthalmology Conference, Aspen, CO, August 2013.

“The Rate of Structural Change in Glaucoma”, ASIA-Association for Research in Vision and Ophthalmology (ARVO), Delhi, India, October 2013.

Keynote Speaker, Imaging and Perimetric Society Annual Meeting, New York, NY, September 2014.

“Case #1: Confocal Scanning Laser Is The Gold Standard”, Prevent Blindness Symposium The Battle of Glaucoma: How to Diagnose, Assess, and Manage Glaucoma That is Getting Worse, Prevent Blindness Symposium, American Academy of Ophthalmology 2014 Annual Meeting, Chicago, IL, October 2014.

KANG ZHANG, M.D., PH.D.

“Genetics, Epigenetics, Stem Cell and 3-D Printing Based Therapies for Blindness”, Co-Organizer, International Masters of Retina Congress, Saint Martin, April 2014.

Nature-Biotechnology Symposium, Co-Organizer, San Diego, CA, June 2014.

“Genomics and Stem Cell Based Therapies: Shaping the Future of Personalized Medicine”, Co-Organizer, Guangzhou, China, May 2014.

CLINICAL TRIALS

GLAUCOMA

CNTF Implant for Glaucoma Neuroprotection – Prospective Phase I Trial of a Surgical Implant. PI: Jeffrey L. Goldberg, M.D., Ph.D.

CNTF Implant for Ischemic Optic Neuropathy Neuroprotection – Prospective Phase I Trial of a Surgical Implant. PI: Jeffrey L. Goldberg, M.D., Ph.D.

Retinal Cell Culture: Survival and Regeneration – prospective generation of human-derived retinal stem cells. PI: Jeffrey L. Goldberg, M.D., Ph.D.

Steroids and Laser Trabeculoplasty (SALT) Trial: Effect of Anti-Inflammatory Treatment on the Efficacy of SLT – Prospective Randomized, Controlled Trial. PI: Jeffrey L. Goldberg, M.D., Ph.D.

Amblyopia: Structural Maintenance and Critical Period Plasticity – Prospective Clinical Trial Funded by the Dana Foundation and Research to Prevent Blindness Walt and Lilly Disney Award. PI: Jeffrey L. Goldberg, M.D., Ph.D.

Assessment of Rapid Disease Progression by Clinical and Genetic Factors in Glaucoma Patients that are High Risk (STARFISH). PI: Robert N. Weinreb, M.D.

Genetic Basis of Glaucoma in African Americans. PI: Robert N. Weinreb, M.D.

Optical Coherence Tomography for the Measurement of Retinal and RNFL Thickness

and Optic Disc.
PI: Robert N. Weinreb, M.D.

Ocular Hypertension Treatment Study Ancillary Investigation: Confocal Scanning Laser Ophthalmoscopy of the Optic Disc - Data Analysis.
PI: Robert N. Weinreb, M.D.

Structural Changes in the Eye Following Glaucoma Surgery.
PI: Robert N. Weinreb, M.D.

OPHTHALMOLOGIC PLASTIC & RECONSTRUCTIVE SURGERY

Effect of Eyelid Ptosis on Driving Performance Using a High-Fidelity Simulator.
PIs: Bobby S. Korn, M.D., Ph.D. and Felipe A. Medeiros, M.D., Ph.D.

PEDIATRIC OPHTHALMOLOGY

Visual Function in Premature Infants with Regressed Retinopathy of Prematurity.
PI: Shira L. Robbins, M.D.

RETINA

Phase 3 Multicenter, Randomized, Double-Masked, Sham-Controlled Study to Assess the Efficacy and Safety of Lampalizumab Administered Intravitreally to Patients with Geographic Atrophy Secondary to Age-Related Macular Degeneration. (Genentech)
PI: Henry Ferreyra, M.D.

READ 3 Study (Juvenile Diabetes Research Foundation) Sub-Investigator: Henry Ferreyra, M.D.
PI: Kang Zhang, M.D., Ph.D.

HARBOR Study (Genentech)
PI: Kang Zhang, M.D., Ph.D.

GALLEY2 Study (Genentech)
PI: Kang Zhang, M.D., Ph.D.

SEAGUL Study (Genentech)
PI: Kang Zhang, M.D., Ph.D.

COMPASS Study (Genentech)
PI: Kang Zhang, M.D., Ph.D.

The Longitudinal Study of the Ocular Complications of AIDS.
PI: William R. Freeman, M.D.

An Open-label, Long-term, Safety and Tolerability Extension Study of Intravitreal VEGF Trap-Eye in Neovascular Age-Related Macular Degeneration.
PI: William R. Freeman, M.D.

A Double-Masked, Randomized, Active-Controlled Study of the Efficacy, Safety and Tolerability of Intravitreal Administration of VEGF Trap-Eye (Intravitreal Aflibercept Injection [IAI]) in Patients with Macular Edema Secondary to Branch Retinal Vein Occlusion.
PI: William R. Freeman, M.D.

A Multicenter, Patient-Masked, Safety Extension Study to Evaluate the Biodegradation of the Brimonidine Tartrate Posterior Segment Drug Delivery System.
PI: William R. Freeman, M.D.

Retina Patient Outcomes Registry with Retrospective and Prospective Chart review.
PI: William R. Freeman, M.D.

Phase 2 Multicenter, Randomized, Double-masked, Placebo Controlled, Parallel-group Study to Investigate the Safety, Tolerability, Efficacy, Pharmacokinetics and Pharmacodynamics of GSK933776 in Adult Patients with Geographic Atrophy (GA) secondary to Age-Related Macular Degeneration (AMD).
PI: William R. Freeman, M.D.

Double-Masked, Randomized, Active-Controlled, Phase 3 Study of the Efficacy and Safety of Intravitreal Administration of VEGF Trap-Eye in Patients with Diabetic Macular Edema.
PI: William R. Freeman, M.D.

Rescue of Bevacizumab or Ranibizumab Failure by Intravitreal Aflibercept (RAFT Study).
PI: William R. Freeman, M.D.

Multicenter Uveitis Steroid Treatment (MUST) Trial.
PI: William R. Freeman, M.D.

Phase 3 Randomized, Double-Masked, Controlled trial to establish the Safety and Efficacy of Intravitreal Administration of Fovista (Anti PDGF-B Pegylated Aptamer) Administration in Combination with Lucentis compared to Lucentis Monotherapy in Subfoveal Neovascular Age-Related Macular Degeneration.
PI: William R. Freeman, M.D.

EAGLE: Evaluating Genotypes Using Intravitreal Aflibercept Injection, (Regeneron Pharmaceuticals)
PI: Kang Zhang, M.D., Ph.D.



CORNEA

Integrative Genetic Analyses in Fuchs Endothelial Cornea Dystrophy
PI: Natalie Afshari, M.D.
NIH/NEI, 3/01/2013-2/28/2016

Cataract Surgical Education Grant
PI: Jeff Lee, M.D.
Alcon, 2013

GLAUCOMA

Predicting and Detecting Glaucomatous Progression Using Pattern Recognition
PI: Christopher Bowd, Ph.D.
NIH/NEI, 2/01/2012-1/31/2016

Kruppel-like Transcription Factors in Retinal Ganglion Cell Regeneration.
PI: Jeffrey Goldberg, M.D., Ph.D.
NIH/NEI, 8/01/12-6/13/2015

Signaling Scaffolds in Stroke.
Co-PI: Jeffrey Goldberg, M.D., Ph.D.
NIH/NEI, 12/01/2011-11/30/2015

Catalyst for a Cure II: Biomarker Initiative
PI: Jeffrey Goldberg, M.D., Ph.D.
Glaucoma Research Foundation, 2/01/12 1/31/18

Enhancing Optic Nerve Regeneration after Trauma
PI: Jeffrey Goldberg, M.D., Ph.D.
DOD, 09/01/13-8/31/17

Warfighters' Supplement: Timing Treatment of Optic Nerve Injury
Subproject - PI: Jeffrey Goldberg, M.D., Ph.D.
DOD, 9/21/13-9/20/15

Translational Therapies for Glaucoma

PI: Jeffrey Goldberg, M.D., Ph.D.
BrightFocus Foundation, 7/01/14-6/30/16

Whole Eye Transplant
Co-PI: Jeffrey Goldberg, M.D., Ph.D.
DOD, 9/01/14-8/31/16

Development of Retinofugal Parallel Pathways
PI: Andrew Huberman, Ph.D.
NIH/NEI, 2/1/2012-1/31/2017

Mitochondrial Dysfunction in Glaucomatous
Optic Neuropathy
PI: Won-Kyu Ju, Ph.D.
Co-Investigator: Robert N. Weinreb, M.D.
NIH/NEI, 9/01/13-8/31/18

Diagnostic Innovations in Glaucoma Study:
Functional Impairment
PI: Felipe Medeiros, M.D., Ph.D.
NIH/NEI, 07/01/11–06/30/16

Sirtuins in Glaucomatous Optic Neuropathy
PI: Robert N. Weinreb, M.D.
NIH, 1/01/2011-6/30/2014

ADAGES III: Contribution of Genotype to
Glaucoma Phenotype in African Americans
PI: Robert N. Weinreb, M.D.
NIH, 9/30/2013-8/31/2018

Ophthalmology and Visual Sciences Career
Development K12 Program
PI: Robert N. Weinreb, M.D.,
NIH/NEI, 04/01/2015-03/31/2020

African Descent and Glaucoma Evaluation
Study (ADAGES) II: Glaucoma Progression
PI: Linda Zangwill, Ph.D.
NIH, 2/1/2010-1/31/2015

African Descent and Glaucoma Evaluation
Study: Structure and Function
PI: Linda Zangwill, Ph.D.
NIH, 9/1/2002-8/31/2013

P30-Center Core Grant for Visual Research
PI: Linda Zangwill, Ph.D.

NIH/NEI, 7/1/2012-6/30/2017
Diagnostic Innovations in Glaucoma: Structural
Assessment
PI: Linda Zangwill, Ph.D.
NIH/NEI, 5/1/2011-4/30/2016

OPHTHALMOLOGIC PLASTIC & RECONSTRUCTIVE SURGERY

Driving Simulator Study to Examine the
Benefits of Ptosis Repair/Blepharoplasty
PIs: Bobby S. Korn, M.D., Ph.D. and Felipe A.
Medeiros, M.D., Ph.D.
ASOPRS Foundation, 9/01/2014

PATHOLOGY

Endoplasmic Reticulum Stress in Retinal
Degeneration
PI: Jonathan H. Lin, M.D., Ph.D.
NIH/NEI, 2010 - 2015

Cellular Mechanisms of Inherited Retinal
Degeneration
Sub-PI: Jonathan H. Lin, M.D., Ph.D.
NIH/NEI, 2009 - 2014

Retinal Pigment Epithelium Stem Cells in AMD
PI: Jonathan H. Lin, M.D., Ph.D.
BrightFocus Foundation Macular Degeneration
Research, 2013 - 2015

Cellular and Molecular Mechanisms of Age-
Related Retinal Degeneration
PI: Jonathan H. Lin, M.D., Ph.D.
Veterans Affairs Biologic Laboratory Research
& Development, 2014 - 2018

PEDIATRIC OPHTHALMOLOGY

Retinopathy of Prematurity and Lipidomics
PI: Shira Robbins, M.D.
UC San Diego Center for Translational
Research Institute Grant, May 2014

Retinopathy of Prematurity and Lipidomics
PI: Shira Robbins, M.D.
UC San Diego Academic Senate Grant,
January 2014 – December 2014

RETINA

Molecular Basis of Hereditary Retinal
Degenerations
PI: Radha Ayyagari, Ph.D.
NIH/ NEI, 9/1/2011-8/31/2015

Mechanistic Based Non-Invasive Assessment
of Retinal Damage in HAART Era
PI: Dirk-Uwe Bartsch, Ph.D.
NIH/NEI, 6/1/2011-5/31/2015

Porous Silicon Particles for Sustained
Intravitreal Drug Delivery
PI: Lingyun Cheng, M.D.
NIH/NEI, 9/1/2011-8/31/2016

Home Vision Monitoring in AREDS 2
PI: Henry Ferreyra, M.D.
Notal Vision, Ltd., 5/31/14

Studies of Retinopathy of AIDS in the HAART
Era
PI: William Freeman, M.D.
NIH/NEI, 4/1/10 - 3/31/15

Tissue Processing and Confocal Microscopy
Co-PI: William Freeman, M.D.
7/1/12 - 6/30/17

Experimental Testing and Validation of a
Quantum Dot FRET Calcium Sensor
PI: Gabriel A. Silva, M.Sc., Ph.D. National
Institute of Biomedical Imaging and
Bioengineering (NIBIB), National Institutes of
Health (NIH), 9/30/13-8/31/15

Information flow and capacity in geometric
networks
PI: Gabriel A. Silva, M.Sc., Ph.D.
Army Research Office (ARO), United States
Department of Defense, 9/01/13- 6/01/14

Generation of iPS lines for blinding eye
diseases
PI: Kang Zhang, M.D., Ph.D.
California Institute for Regenerative Medicine,
8/01/13-7/30/15

Biomaterial enhancement of stem cell
transplant efficacy for macular degeneration
Co-PI: Kang Zhang, M.D., Ph.D.
NEI, 2/1/2014-1/31/2017

Genetics and Functional Studies of Age-
Related Macular Degeneration - To
Characterize Chromosome 10q Variants and
Functions in Age Related Macular
Degeneration
PI: Kang Zhang, M.D., Ph.D.
NEI, 9/30/08 - 8/30/14

Regeneration of Retinal Neurons by Chemically
Induced Programing of Muller GLI
PI: Kang Zhang, M.D., Ph.D.
NIH/NEI, 9/30/2008-7/31/2014



GIVING

INVEST IN THE DEPARTMENT OF OPHTHALMOLOGY

For over 30 years, the philanthropic support from generous individuals, foundations and corporations has provided the Department of Ophthalmology with valuable resources for patient care, research, education and community service. The state of California provides less than 4% of our budget and therefore, we must rely on private gifts. As a friend of the Department of Ophthalmology, there are several giving options for those who wish to contribute to our tradition of excellence.

Outright Gifts

Immediate Impact

Outright gifts of all sizes made with cash, check, credit cards, savings bonds, stocks, marketable securities or property provide immediate impact to our faculty and facility. If writing a check, please make payable to the "UC San Diego Foundation" and put the Shiley Eye Center in the memo section. The check should be accompanied with a letter stating the focus of your donation and mailed to The Shiley Eye Center, Mailcode 0946, 9415 Campus Point Drive, Room 241B, La Jolla, CA, 92093-0946.

Annual Gifts

Circle of Sight

Started in 1996, the Circle of Sight is the Shiley Eye Center's recognition program that acknowledges donors who make annual gifts of \$250 or more to support the greatest needs of the Department. Several times a year, the Shiley Eye Center's Circle of Sight members are invited to attend Vision Research Lectures and receptions where members get to personally know our faculty. The members are also ambassadors for the Shiley Eye Center within the San Diego community. The Circle of Sight group is the backbone of many of our successful initiatives.

Planned Gifts

Your Vision for Tomorrow

Please consider a charitable

bequest in your estate plan that will benefit the future and directly supports the Department of Ophthalmology. You can turn your appreciated stocks into extra retirement income, receive a charitable tax deduction, avoid capital gains tax and support Shiley at the same time. We would be pleased to provide you, your attorney, accountant or tax advisor with specific bequest language for inclusion in your will, trust or as a beneficiary of your retirement account – all of which can lessen the impact of taxes on your heirs.

Tribute Gifts

Acknowledge Someone Special

Contributions can be made in memory, honor or in celebration of a loved one or to commemorate a special occasion. Gifts can be made to honor a special physician, for example, who has played a significant role in your eye health. Such a gift creates a legacy and memorializes the person by providing direct support to the Department.

Matching Gifts

Double or Triple your Gift

Many employers offer a matching gift program to their employees meaning that your donations are worth even more. All you need is a Matching Gift Form from your employer.

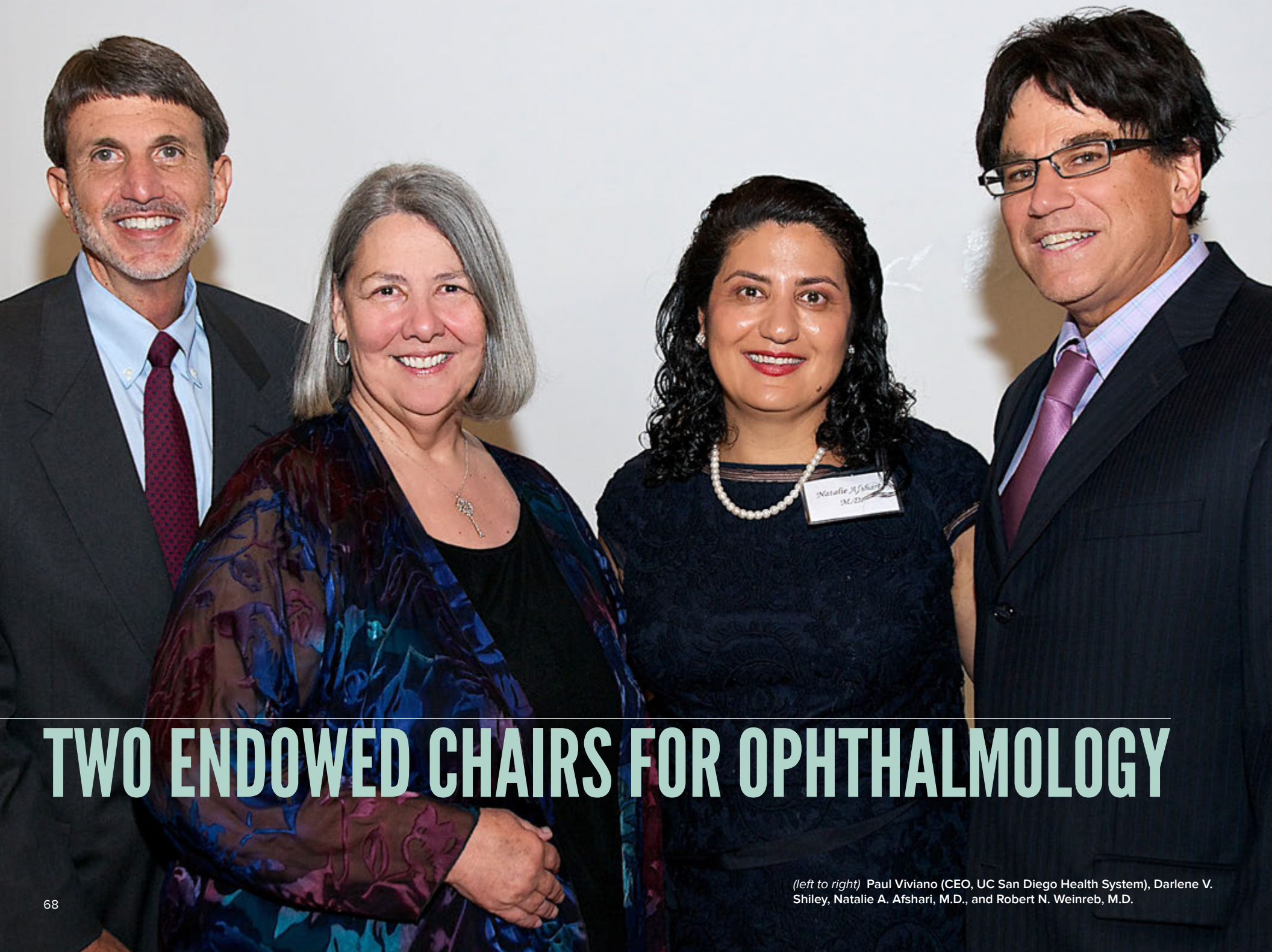
Endowments

Gifts in Perpetuity

A gift of endowment demonstrates your long-term commitment to the Department of Ophthalmology since the fund is maintained in perpetuity. Your gift can support programs, lectures, awards, fellowships and Chairs. An endowment serves as an enduring legacy since it often bears the name of a donor or loved one. Every donation makes an impact on our patients, faculty and staff, as well as the field of Ophthalmology. We cherish the partnership that we have developed with those generous members of the community who invest in us. There are also naming opportunities for gifts including: endowed chairs, laboratories, specialized ophthalmic clinics and research initiatives. We would welcome the opportunity to have a confidential conversation with you, so we clearly understand how you want your gift to be used.

For further information about making a donation, please contact:

Karen Anisko Ryan
Phone: 858-534-8017
Email: kanisko@ucsd.edu



TWO ENDOWED CHAIRS FOR OPHTHALMOLOGY

(left to right) Paul Viviano (CEO, UC San Diego Health System), Darlene V. Shiley, Natalie A. Afshari, M.D., and Robert N. Weinreb, M.D.

Over the past year, the UC San Diego Shiley Eye Center and Department of Ophthalmology announced the appointments of Natalie A. Afshari, M.D. to the *Stuart I. Brown, M.D. Chair in Ophthalmology in Memory of Donald P. Shiley* and Felipe A. Medeiros, M.D., Ph.D. to the *Ben and Wanda Hildyard Chair for Diseases of the Eye*. These endowed chairs will provide supplemental funds for the inaugural chair holders' research and teaching.

Natalie A. Afshari, M.D., Professor of Ophthalmology, Chief, Division of Cornea and Refractive Surgery, and Director of Education, is an accomplished clinician, surgeon and research scientist with over 100 publications. She is well-known for her work studying the genetics of Fuchs Corneal Dystrophy, a disease that impairs vision and is one of the leading causes for corneal transplants in the United States. In collaboration with colleagues, she has made great strides in pinpointing areas of the genome responsible for the disease and is currently working on developing eye drop medications, which she hopes may one day provide an alternative to surgery.

Dr. Afshari stated, "I am so proud to carry the names of Stuart I. Brown and Donald P. Shiley, both renowned innovators in their field. This generous endowment will greatly impact and accelerate my research in advancing our understanding of ocular disorders and developing new therapies."



(above) Felipe A. Medeiros, M.D., Ph.D.

The Stuart I. Brown, M.D. Chair in Ophthalmology in Memory of Donald P. Shiley is named for former Ophthalmology Department Chair, Stuart I. Brown, M.D. and Donald P. Shiley, benefactor and inventor of the Shiley heart valve. The Shileys have been generous not only to the UCSD Department of Ophthalmology but also other areas of UCSD as well as all around the city and nationally.

Felipe A. Medeiros, M.D., Ph.D., Professor of Clinical Ophthalmology and Medical Director at the Hamilton Glaucoma Center, has research interests which encompass advanced imaging analysis for the diagnosis and detection of glaucoma progression, new techniques for intraocular pressure measurement, functional impairment in glaucoma and prediction models and risk assessment in glaucoma. In his laboratory, he also is studying patients' visual performance in glaucoma and other eye diseases. Dr. Medeiros has numerous publications and was recently

"I am honored to be the first faculty member to hold the Hildyard Chair for Diseases of the Eye..."

FELIPE MEDEIROS, M.D., PH.D.

named by Expertscape as one of the leading glaucoma specialists in the world.

"I am honored to be the first faculty member to hold the *Hildyard Chair for Diseases of the Eye* and am appreciative for the resources it provides to advance my work," said Medeiros.

Ben and Wanda Hildyard are former residents of La Jolla who are now deceased. Mr. Hildyard was a civil engineer who worked at the Federal Energy Regulatory Commission and Mrs. Hildyard worked at UC San Diego during the time of its early development. The chair is one of three established by a \$6 million bequest from Ben and Wanda Hildyard to help UC San Diego School of Medicine recruit and retain top faculty members.

"These endowed chairs recognize both Drs. Afshari and Medeiros for their groundbreaking clinical and research contributions to ophthalmology," said Robert N. Weinreb, MD, Distinguished Professor and Chair of the department of ophthalmology and Director of the Shiley Eye Center.

Funded by private support, these endowed chairs will live on in perpetuity to help to attract and retain outstanding faculty by allowing the campus to offer chair holders supplemental funds for teaching, research and service.

The Honor Roll for the Department of Ophthalmology gratefully acknowledges donations from September 1, 2013 to September 30, 2014. Thank you to all of the individuals, foundations and corporations listed below.

Gifts of \$100,000 & Above

BrightFocus Foundation
David J. Dunn
Pauline Foster
Glaucoma Research Foundation
Heidelberg Engineering GmbH
Dorothy R. Kerrigan Trust
Pew Charitable Trusts
Research to Prevent Blindness
Shiley Awards in Health Education
and the Arts funded by Donald &
Darlene Shiley
Dixie & Ken Unruh
Carol & Larry Veit

Gifts of \$50,000 to \$99,999

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Gifts of \$10,000 to \$49,999

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James & Josephine Zolin
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Gifts of \$5,000 to \$9,999

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San Diego Lions Welfare Foundation

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Jeanne M. Sullivan

Gifts of \$1,000 to \$4,999

Natalie Afshari, M.D.
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Chuck & Pilar Bahde
Joseph Blood
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The Department of Ophthalmology sadly acknowledges a few friends and key supporters who have passed away during the past year.

They remain in our thoughts.

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