FOR SIGHT

Annual Report 2025

Shiley Eye Institute
UC San Diego Health

The Viterbi Family
Department of Ophthalmology

UC San Diego
SCHOOL OF MEDICINE

Shiley Eye Institute
Viterbi Family Department of Ophthalmology

Shiley Eye Center
Viterbi Family Vision Research Center
Hamilton Glaucoma Center
Jacobs Retina Center
Ratner Children's Eye Center
Perlman Suites 1A and 1B
Hillcrest Eye Center
Shiley Eye Care at Rancho Bernardo

On the Cover
Aerial photograph of the UC San Diego Health Shiley Eye Institute campus

Photograph by Kyle Dykes, UC San Diego Health Sciences

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For access to the archive of previous annual reports, please visit the SEI website here:

Letter from the Chair

Dear Friends,

It was a defining year for the Shiley Eye Institute (SEI) and Viterbi Family Department of Ophthalmology. This year, we strengthened our dedication to novel research, exemplary clinical care, leading-edge education, and impactful community service.

We marked an exciting new chapter for patient care at SEI. Thanks to the steadfast generosity of Darlene V. Shiley and the investment of UC San Diego Health, we transformed our second floor into a state-of-the-art clinical space. The newly renovated second floor includes exam and procedure rooms for retina and glaucoma, a refractive laser center, and a microsurgery training facility. We welcomed patients to the space in May.

Perhaps the most notable event this year was the opening of the Viterbi Family Vision Research Center in June. The five-story, 100,000-square-foot facility was made possible thanks to the generosity of Andrew J. Viterbi, PhD. Set to become a global epicenter of vision research excellence, the facility houses research laboratories, dedicated clinical trial space for gene and stem cell therapies, and conference facilities.

We also welcomed new faculty, academic collaborators, and appointed holders of new endowed chairs. Much of this was made possible through philanthropic support.

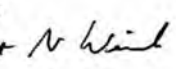
Throughout the year, we celebrated prominent milestones, including 25 years of our Children's EyeMobile. Thanks to our generous supporters we bring free and accessible vision services to children across San Diego County. Our new adult EyeMobile also is now in action, serving seniors and adults in underserved areas.

Another major milestone we celebrated this year is 30 years of the Ratner Children's Eye Center. For three decades, the center has been providing compassionate and specialized care for our youngest patients.

Our progress this year reflects the drive, creativity, and perseverance of the entire SEI team. Motivated by a shared goal to enhance lives through better vision care and discovery, we continue to advance our clinical efforts and scientific understanding. This momentum is fueled by the encouragement and generosity of our partners, friends, and community.

With your support, we look forward to shaping a brighter future for vision health and innovation.

Sincerely,



Robert N. Weinreb, MD
Chair and Distinguished Professor, Ophthalmology
Director, Shiley Eye Institute

Welcome New School of Medicine Dean

The Shiley Eye Institute (SEI) and Viterbi Family Department of Ophthalmology at UC San Diego welcome the newly appointed Associate Vice Chancellor and Dean of UC San Diego School of Medicine, Barbara Jung, MD.

Beginning Jung's tenure in January 2025, she is focusing on building on the existing to elevate innovation at all levels by prioritizing the engagement of faculty, students, trainees, and staff across the School of Medicine.

"I have enjoyed re-connecting with the entire School of Medicine community and getting to know each of our departments since my arrival. Ophthalmology has impressed me with unparalleled growth and even greater opportunities," said Jung. "I continue to be inspired by the school's unwavering commitment to excellence in research, education and clinical care. As dean, one of my top priorities is to harness the collective energy and ideas from our community to evolve the identity and impact of the School of Medicine. We already have such a strong foundation to build upon and I am excited to continue this journey with our faculty, staff and learners."

Before Jung took on her current role at UC San Diego, she completed medical school in Germany. Following medical school, she spent three years conducting colorectal cancer research at the Sidney Kimmel Cancer Center in San Diego. She went on to complete an internal medicine residency and gastroenterology fellowship at UC San Diego. In her career, she served as chief of the Division of Gastroenterology and Hepatology at the University of Illinois Chicago for six years and most recently as a professor and the Robert G. Petersdorf Endowed Chair and Chair of Medicine at the University of Washington for five years.

"UC San Diego holds a special place in my heart as it is where I trained and became an academician," said Jung. "I am thrilled to be here in a leadership capacity and continue to build upon our strengths and tackle the challenges that lie ahead. In a rapidly changing landscape, I am confident our collective passion for making a difference in the world will enable the School of Medicine to thrive and further augment our lasting impact on our learners, patients and community."

"We are excited to be working with Dr. Barbara Jung in her new role as associate vice chancellor and dean of the School of Medicine," said Robert N. Weinreb, MD, SEI chair and director. "Her remarkable career, characterized by visionary leadership, makes her uniquely positioned to lead one of the nation's top medical schools."

Executive Committee

ROBERT N. WEINREB, MD
Chair

NATALIE A. AFSHARI, MD
Vice Chair, Education

DON O. KIKKAWA, MD
Executive Vice Chair, Clinical

WILLIAM R. FREEMAN, MD
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Division Chief, Informatics and Data Science

DAVID B. GRANET, MD
Vice Chair, Pediatric Ophthalmology

LINDA ZANGWILL, PhD
Interim Director, Research

CRAIG KISHABA, MBA
Administrative Vice Chair

2025 By The Numbers

135,000
SCHEDULING PHONE CALLS HANDLED

11,895
SAME DAY APPOINTMENTS

154,446
TOTAL VISITS

7,315
TOTAL SURGERIES

EyeMobiles

Providing no cost services to underserved children and adults within the San Diego region.

Children's EyeMobile

11,039
VISION SCREENINGS

1,866
DILATED EXAMS

1,845
GLASSES PROVIDED

238,881
TOTAL CHILDREN SCREENED SINCE 2000

Adult EyeMobile

1,339
DILATED EXAMS

1,285
GLASSES PROVIDED

98
REFERRALS TO SPECIALISTS IN THE COMMUNITY

A Vision Realized: Growing the SEI Clinic

(Pictured left to right, top to bottom):

Karen Anisko Ryan, MS, Tom Cerruti, Linda Shoaff, Anthony Cerrato, NP, Juan Arias, MBA, Andrea Lloyd, Cathi Lyons, MHA, Robert N. Weinreb, MD, Darlene Shiley, Riley Thomas, MBA, and Paulyne Lux, FNP

On Tuesday, May 6, 2025, the Shiley Eye Institute (SEI) and the Viterbi Family Department of Ophthalmology welcomed the first patients to the newly renovated second-floor clinic. In partnership with UC San Diego Health, this expansion was made possible by the longstanding generosity of Darlene V. Shiley. With a new $10 million gift, she continues to shape SEI.

In April, before doors opened to patients, Mrs. Shiley got together with **Robert N. Weinreb, MD** and staff to commemorate the occasion.

"As we look to the future, the newly renovated clinic is a profound step forward for many years to come in advancing our mission to preserve and restore sight for many years to come," said Weinreb.

The additional clinical space reflects SEI's commitment to excellence and patient-centered design. It features twenty-five new examination rooms dedicated to retina and glaucoma care, several diagnostic testing and imaging rooms, ophthalmic procedure rooms for minor in-clinic treatments and a refractive and laser center. There also are comfortable and spacious waiting areas designed to enhance the patient experience.

This renovation not only increases clinical capacity but also supports a more efficient experience for patients and care teams. The added space allows for greater collaboration among specialists and continued integration of emerging technologies in diagnostics and treatment.

Mrs. Shiley's gift continues the legacy of her late husband, Donald Shiley, and strengthens an over three decades-long partnership that has helped establish SEI. Her philanthropy continues to enable countless patients to receive the highest quality eye care and has propelled research and education that benefits individuals worldwide.

SEI Earns LEED Silver Certification

The Shiley Eye Institute (SEI) second-floor renovation project earned a LEED Silver certification from the U.S. Green Building Council. This certification is a mark of sustainability leadership that honors SEI's commitment to creating a cost-effective, green building during the renovation.

Eyes on Discovery: The Opening of the Viterbi Family Vision Research Center

(Pictured left to right):

John M. Carethers, MD, Barbara Jung, MD, Tom Cerruti, Pradeep K. Khosla, PhD, Andrew J. Viterbi, PhD, Robert N. Weinreb, MD, Hanna and Mark Gleiberman

The Shiley Eye Institute (SEI) and Viterbi Family Department of Ophthalmology celebrated the opening of The Andrew and Erna Viterbi Family Vision Research Center on June 11, 2025, with a ribbon-cutting ceremony. The new five-story 100,000-square foot facility, designed to accelerate breakthroughs in treating and curing eye diseases, was initiated by a $50 million gift from philanthropist Andew J. Viterbi, PhD.

Supporters, faculty and university leadership gathered to commemorate the occasion. Among those in attendance from UC San Diego were, Chancellor Pradeep K. Khosla, PhD, Vice Chancellor for Health Sciences, John M. Carethers, MD, MACP, Chief Executive Officer of UC San Diego Health, Patty Maysent, MPH, MBA, Associate Vice Chancellor and Dean of the University of California San Diego School of Medicine, Barbara Jung, MD, and Chair and Director of SEI, **Robert N. Weinreb, MD**.

“This new center will allow us to expand interdisciplinary collaborations across campus, throughout the San Diego community and worldwide. It will accelerate the pace of discovery and innovation of our vision research, with our continued focus on preventing vision loss, restoring vision and most importantly, curing blindness,” said Weinreb.

Designed by architecture firm NBBJ, the center’s glass façade draws inspiration from the relationship between the eye and light. The new facility supports collective research efforts in areas such as gene and stem cell therapies, glaucoma, macular degeneration and other blinding eye diseases. It houses a range of dedicated spaces, including wet and dry laboratories, a clinical trial suite, and education spaces for both professional training and community outreach.

Viterbi’s transformative gift honors his father, Achille Viterbi, a respected ophthalmologist. In addition to establishing the research center, his support also established The Andrew and Erna Viterbi Family Department of Ophthalmology within the School of Medicine and created six endowed chairs intended to recruit and retain top-tier research faculty.

“My purpose (in making this gift) was to honor my father, who was an ophthalmologist who had to immigrate to the U.S. from Italy two years before World War II began,” said Viterbi. “I thought that naming a department and research center was a fitting way to honor him. I also established six endowed chairs because I believe that a university and its reputation depend upon people – the faculty and the staff that run it.”

As a longtime advocate for the power of philanthropy in science and education, Viterbi went on to share “Today, universities are more dependent upon philanthropy to drive innovative research and for that reason, I am proud to have participated in helping to make this center possible.”

Fighting Vision Loss: **The PRPH2 Mutation Research Project**

The PRPH2 Mutation Research Project is now in its fourth year led by **Shyamanga Borooah, MD, PhD**, and **Radha Ayyagari, PhD**, with funding from the Nixon Visions Foundation led by philanthropists Janine and Brandon Nixon.

Started in 2021, this initiative focuses on a gene called PRPH2. This gene helps make a protein in the retina – the back part of the eye that helps us see light and color. When this gene doesn’t work right, it can cause early macular degeneration, which leads to loss of central vision over time. The scientists are using stem cells to study the disease and hope to find ways to diagnose it early and possibly cure it in the future.

Borooah’s team is looking at how this disease progresses by studying changes in patients’ eyes over time. They found that people with this gene mutation have thinner retinas – a clue that could translate lab findings into future clinical treatments. The team is collecting patient data to train AI to track retinal volume changes leading to developing new treatments for inherited eye diseases. They have just started a clinical trial testing a “first of its kind” treatment targeting the PRPH2 mutation.

Ayyagari’s team is studying how the gene mutation affects different cells in the retina using animal models. They are trying to understand which changes in the eye cause the disease to get worse. Most recently, the team is working towards creating therapeutic studies utilizing and evaluating gene editing and noting changes in the models.

In collaboration, both teams are investigating ways to slow down the disease, discover potential personalized treatments and protect vision for people with PRPH2 gene mutations as well as other inherited retinal degenerations.

Gleiberman Family Expands Research

Hanna and Mark Gleiberman's dedication to supporting eye health and research at the UC San Diego is yielding transformative results. Their philanthropic support is strengthening the fight against glaucoma by funding innovative research and securing its scientific leadership.

The couple recently provided a $1 million gift to establish the Gleiberman Family Fund for Retinal Vascular Biology Research within the Viterbi Family Department of Ophthalmology and Shiley Eye Institute.

This gift adds to the couple's foundational gift of $20 million in 2022 to establish the Hanna and Mark Gleiberman Center for Glaucoma Research at UC San Diego. **Wonkyu "Daniel" Ju, PhD** was appointed an inaugural holder of a Hanna and Mark Gleiberman Chancellor's Endowed Chair in Glaucoma Research, the first of three endowed chairs for the Gleiberman Glaucoma Center created with funding from the 2022 gift.

"We are so grateful to Hanna and Mark Gleiberman for their support of vision and glaucoma research in UC San Diego's Department of Ophthalmology," said **Robert N. Weinreb, MD**, Chair and Director, Viterbi Family Department of Ophthalmology. "Private support drives innovative research, which then translates into better treatments and cures for our patients suffering from blinding eye diseases."

The newly established Gleiberman Family Fund for Retinal Vascular Biology Research will support collaborative investigations led by **Eric Nudleman, MD, PhD**, in partnership with Richard Daneman, PhD, exploring the cellular and molecular mechanisms that regulate retinal vascular biology with the goal of identifying new therapeutic targets for blinding retinal diseases.

Nudleman's clinical focus is on vitreoretinal diseases and surgery, with a special interest in pediatric vitreoretinopathies. His laboratory focuses on retinal vascular diseases including the mechanism of vascular leakage, neovascularization and fibrosis.

"The Gleiberman's generous support to the Viterbi Family Department of Ophthalmology will accelerate retinal vascular research and drive innovation helping to transform lives far beyond the lab," stated Nudleman.

Wonkyu Ju, PhD, Named Hanna and Mark Gleiberman Chancellor's Endowed Chair in Glaucoma Research

Wonkyu "Daniel" Ju, PhD, has been appointed as the inaugural chairholder of the Hanna and Mark Gleiberman Chancellor's Endowed Chair in Glaucoma Research.

The Hanna and Mark Gleiberman Chancellor's Endowed Chair in Glaucoma Research is one of three endowed chairs established by Hanna and Mark Gleiberman to support groundbreaking research aimed at improving patient outcomes and finding new therapies for glaucoma. Affecting more than 100 million individuals, glaucoma is the leading cause worldwide of irreversible blindness.

"With this support, we have the opportunity to accelerate work that will transform how we understand and treat glaucoma — directly impacting patients' lives. I'm honored to carry this work forward," stated Ju.

Ju is a Professor of Ophthalmology and Bioengineering at the Shiley Eye Institute and Viterbi Family Department of Ophthalmology. His work focuses on issues with glaucoma and mitochondria, the part of the cell that helps give them energy. His studies examine the mitochondrial network and function in neurodegeneration, neuroinflammation and neuroprotection in glaucoma and Alzheimer's disease. He is investigating gene-based treatments to protect and restore vision of individuals with glaucoma, further solidifying the Shiley Eye Institute and Viterbi Family Department of Ophthalmology's position as a global leader in glaucoma research.

"We are so grateful to Hanna and Mark Gleiberman for making this investment in the Department's glaucoma research. An endowed chair empowers scientists to pursue bold, innovative therapeutic strategies for debilitating glaucoma and offers hope for vision restoration and improved quality of life" stated **Robert N. Weinreb, MD**, Chair and Director, Viterbi Family Department of Ophthalmology.

A Vision That Rolls Forward:
Celebrating 25 Years of the Shiley EyeMobile for Children

This year marked the 25th anniversary of the EyeMobile for Children at the Shiley Eye Institute (SEI) and Viterbi Family Department of Ophthalmology. The EyeMobile for Children has become the cornerstone of the SEI community service pillar, bringing free vision services and glasses to underserved children all over San Diego County.

Vision screenings and eye exams are important because finding eye diseases early allows for more effective treatment to save and preserve sight, according to the Centers for Disease Control and Prevention (CDC). Though vision exams are so crucial, less than half of preschool children have had their vision tested to check for common eye diseases according to the CDC.

SEI has been helping bridge the gap for children who have not received vision care thanks to the EyeMobile for Children, an idea by founding SEI Chair **Stuart I. Brown, MD** that came to fruition in 2000. He retrofitted a former bread delivery truck into what became the first EyeMobile at SEI.

Over the years, the EyeMobile for Children has provided over 238,881 vision screenings, 39,341 eye exams and 19,285 pairs of glasses - all at no cost to underserved children and their families in San Diego who face barriers related to culture, language, understanding care, transportation to appointments and income.

The EyeMobile for Children's success from the beginning has relied on the generosity of the SEI community. Among the invaluable contributors to the EyeMobile for Children are Jane and Tom Fetter, who for 15 years have been donating fuel at no cost, as well as Price Philanthropies contributing to the care of City Heights children.

Under the direction of Iliana Molina, DHA, MBA, the EyeMobile for Children underwent different looks in three different vehicles.

The previous EyeMobile for Children was retrofitted to became SEI's very first EyeMobile for Adults in 2024, thanks to an idea from Chair and Director, **Robert N. Weinreb, MD**. A generous gift from his patient, Dr. Bruce Lawrence and his wife Janet also made the new avenue of care possible for underserved adults.

(Pictured left to right, top to bottom):

Jon Chavis, Leslie Espinoza, Eric Hernandez, Alberto Enriquez, Rachel Cao, OD, Iliana Molina DHA, Andrea Russo, OD

"Our EyeMobile programs are a testament to what can be achieved when care meets innovation. As we mark 25 years of the EyeMobile for Children, we remain focused on providing free vision care to those who need it most" said Weinreb.

SEI EyeMobile Director Recognized for Health Care Leadership

The Shiley Eye Institute (SEI) and Viterbi Family Department of Ophthalmology EyeMobile Program Director, Iliana Molina, DHA, MBA was named a 2025 "Women of Influence in Healthcare" honoree by the San Diego Business Journal. This recognition celebrates her outstanding leadership, significant contributions and positive impact in her work as Director of the SEI EyeMobile program.

Seeing Success: Anne F. and Abraham Ratner Children's Eye Center 30-Year Milestone

The Anne F. and Abraham Ratner Children's Eye Center at the Shiley Eye Institute (SEI) and the Viterbi Family Department of Ophthalmology have been providing sight-saving care to patients for 30 years. The center focuses on preventing and treating vision loss in children of all ages, while training the next generation of pediatric ophthalmologists.

In 1993, Mrs. Ratner donated the funds to establish the Anne F. and Abraham Ratner Children's Eye Center at SEI. Now deceased, she was motivated by her concern for children to start their life free of any curable impediments to their eyesight. She stated at the groundbreaking, "The children of San Diego need an eye center that was made for them."

The building was designed to make visits to the eye doctor more pleasant and less intimidating for young patients, ultimately leading to more successful eye examinations. Inside the center features child-friendly, state-of-the-art exam rooms, specially designed to evaluate sight in patients of all-ages – even those who are too young to verbally tell the doctor what they see.

With the goal of attracting world-renowned faculty to best serve young patients and lead the children's eye center, Mrs. Ratner established the Anne F. Ratner Endowed Chair in Pediatric Ophthalmology.

Under the direction of **David B. Granet, MD, MHCM**, the inaugural Anne F. and Abraham Ratner Children's Eye Center Director and Chief, Division of Pediatric Ophthalmology and Eye Alignment Disorders, the center's faculty have maintained, for over three decades, a leadership role in the pediatric ophthalmology community both nationally and internationally, receiving local and national honors for their exemplary contributions to research, education, and patient care.

"For 23 of the Center's 30 extraordinary years, I've had the honor of protecting the sight of children – each patient a story, each family a partnership in care. Side by side with brilliant colleagues and backed by the strength of our university

health system, we've turned challenges into breakthroughs and compassion into impact. This place isn't just where I work – it's where vision, in every sense of the word, comes to life," stated Ratner faculty member **Shira L. Robbins, MD**.

When looking toward the next chapter at the center, SEI Chair and Director **Robert N. Weinreb, MD**, said, "We are committed to building upon the extraordinary foundation laid over the past 30 years – training future leaders and advancing innovation towards a future where every child can see the world clearly."

Current faculty at the Ratner Children's Eye Center include: **Shira L. Robbins, MD**; **Laura Hennein, MD; Mansoor Movaghar, MD**; **Jolene Rudell, MD, PhD**, and **David B. Granet, MD, MHCM**.

(Pictured left to right, top to bottom):

Anne F. Ratner with David Granet, MD, 2004

Anne F. Ratner, 1995

Shira Robbins, MD, 2012

David B. Granet, MD, John F. Alksne, MD, Anne F. Ratner, President Emeritus Richard Atkinson, Stuart I. Brown, MD, 1994

Welcome Research Director Viterbi Family Vision Research Center: Rich Daneman, PhD

The Viterbi Family Department of Ophthalmology and the Shiley Eye Institute at UC San Diego welcomes Richard Daneman, PhD, Associate Professor in the Departments of Pharmacology and Neurosciences and the Director of the Division of Neuropharmacology, as the inaugural Research Director of the Viterbi Family Vision Research Center.

Daneman received his BS at McGill University, in Montreal Canada majoring in biochemistry. He then received his PhD in developmental biology from Stanford University where he studied the molecular mechanisms that regulate blood-brain barrier (BBB) formation in the laboratory of Dr. Ben Barres. He then started his own lab as a Sandler Fellow at UC San Francisco, before moving to a faculty position at UC San Diego.

Daneman focuses his studies on understanding the molecular mechanisms that regulate BBB and blood-retinal barrier (BRB) function during health and disease. His lab uses a combination of cellular, molecular and genetic approaches to understand the mechanisms of barrier formation and function, addressing important questions such as: What are the mechanisms that regulate the formation and function of these barriers? How do these barriers interact with the neuronal circuitry to regulate brain and retinal function? What are the molecular mechanisms that lead to BBB and BRB disruption during disease? The overall goal of his work is to elucidate these mechanisms, such that he will be able to develop therapeutics to modulate these barriers to treat neurological and ophthalmological diseases.

Daneman has received numerous honors including the Klingenstein-Simons Award in Neuroscience, the Rita Allen Foundation Milton E. Cassel Scholar award, the AAA young investigator award, the ASPET Neuropharmacology Early Career award and the NINDS Landis Award for Outstanding Mentorship.

Welcome New Faculty: Jacob Heng, MD, PhD

The Viterbi Family Department of Ophthalmology and the Shiley Eye Institute at UC San Diego welcomes **Jacob Heng, MD, PhD** as an Assistant Professor of Clinical Ophthalmology. Heng is board-certified and specializes in the surgical and medical management of adult vitreoretinal disease.

Heng earned his medical degree from the University of Glasgow, in Scotland, United Kingdom, where he was awarded the Brunton Memorial Prize for graduating top of his medical school class. He earned his PhD in Neuroscience from the Johns Hopkins University School of Medicine, where he studied retinal disease models under the guidance of Dr. Jeremy Nathans, MD, PhD.

Heng subsequently completed his ophthalmology residency at the Yale University School of Medicine, where he also served as the Chief Resident in his final year of residency and graduated with multiple awards including the Marvin L. Sears Award for Clinical Excellence, Susan Hall Forster Resident as Teacher Award, Patrick Mathews Award for Devotion to Family and Profession. He then completed a two-year fellowship in vitreoretinal surgery at the Wilmer Eye Institute at the Johns Hopkins Hospital in Baltimore, where he received a VitreoRetinal Surgery Foundation Research Award.

Heng is a physician-scientist studying the regulation of the blood-retinal barrier, a collection of specialized structures that regulate the movement of molecules between the retina and the bloodstream. His special interests also include the retina and vitreous, adult vitreoretinal disease with specialization in age-related macular degeneration (AMD), diabetic retinopathy, retinal vein occlusions, retinal detachments, proliferative vitreoretinopathy, macular holes, epiretinal membranes and secondary intraocular lenses.

Welcome to the Viterbi Family Vision Research Center: Jeffrey D. Esko, PhD

Jeffrey D. Esko, PhD, is a Distinguished Professor of Cellular and Molecular Medicine and founding Director of the Glycobiology Research and Training Center at UC San Diego. He received his PhD in Biochemistry at the University of Wisconsin in Madison. After an independent fellowship at the Molecular Biology Institute at the University of California, Los Angeles, he moved to the University of Alabama at Birmingham in 1983 as an Assistant Professor and then as a full Professor to the Department of Cellular and Molecular Medicine at UC San Diego in 1996 to help build a program in glycosciences.

Work in Esko's laboratory is directly related to vision research. He is one of the world's leaders in the study of complex sugars, called glycans, that are present throughout the eye in the cornea, retina, blood vessels and optic nerve. Current work includes genetic and biochemical studies of a subclass of glycans called heparan sulfate, with the objective to understand its construction and regulation in health and ocular diseases. He has published over 350 scholarly papers, reviews and book chapters in his career. He was editor/ author of the first textbook in the field, Essentials of Glycobiology. He is also a devoted educator, having developed several graduate and undergraduate courses in the glycosciences and he has trained a large cohort of graduate students and post-doctoral fellows over the last four decades. In recognition of his teaching and mentoring activities, he received the UC San Diego Chancellor's Award for Excellence in Postdoctoral Scholar Mentoring as well as several national and international awards.

Esko's work in vision science was stimulated in part by his partnership with **Christopher Toomey, MD, PhD** in the Viterbi Family Department of Ophthalmology to study the role of glycans in the eye in general and most recently in the retina. His studies with Toomey focus on the mechanism of trapping of lipoproteins and membrane vesicles by heparan sulfate in Bruch's membrane as a causal factor in age-related macular degeneration (AMD). The collaboration has already produced two high profile papers in the journal Ophthalmology and the Proceedings of the National Academy of Sciences. He serves as a consultant to Kalaris

Therapeutics, which was cofounded by **Napoleon Ferrara, MD** in the Viterbi Family Department of Ophthalmology to develop treatments for AMD.

Esko's decision to further partner and move his laboratory to the new Viterbi Family Vision Research Center creates many opportunities for collaboration with other members of the department interested in the extracellular matrix and its impact on eye development, architecture, and function in health and disease. He and Toomey are in the early stages of developing a new Center for Age-Related Macular Degeneration.

Esko's work has been supported by grants from the National Institutes of Health, the National Science Foundation and the private sector. He has served on numerous editorial boards and scientific boards, in addition he was past President of the Society for Glycobiology and past Director of the Biomedical Sciences Graduate Program at UC San Diego. He cofounded Zacharon Pharmaceuticals, Inc (acquired by Biomarin in 2012), and TEGA Therapeutics, Inc. His work has been recognized by the Karl Meyer Award, the highest honor from the Society for Glycobiology, The President's Innovator Award and the Distinguished Service Award from the Society, the IGO award from the International Glycoconjugate Organization, a MERIT Award from the National Institutes of Health, an honorary medical degree from the University of Uppsala and he was elected as a Fellow of the American Association for the Advancement of Science.

Welcome New Faculty: Rebecca Lian, MD

The Viterbi Family Department of Ophthalmology and the Shiley Eye Institute (SEI) at UC San Diego welcomes **Rebecca Lian, MD** as an Assistant Clinical Professor of Ophthalmology specializing in comprehensive ophthalmic care.

Lian attended UC Berkeley as a Regents and Chancellors Scholar and graduated with her undergraduate degree in Public Health. She went on to complete her medical education at University of Hawaii at Manoa. She then moved to San Diego and completed her residency in Ophthalmology at SEI and Viterbi Family Department of Ophthalmology at UC San Diego.

Currently, Lian is participating in the GOAL program (Global Ophthalmology and Advanced Leadership), an educational collaboration with UC San Diego Viterbi Family Department of Ophthalmology, UC San Diego Division of Preventative Medicine in the Department of Family Medicine and the Graduate School of Public Health at San Diego State University. She will be receiving her Masters in Public Health upon completion.

Lian also oversees the Ophthalmology consult service at La Jolla Jacobs Medical Center and enjoys education and teaching undergraduate students and resident physicians. Lian's research interests include preventative eye care and the intersection of Public Health and Ophthalmology.

New AI Tool Predicts Vision Loss Risk in Astronauts – Before Launch

Since the dawn of human spaceflight, scientists have carefully studied the effects of space and microgravity on astronauts. After decades of observations and examinations, one truth is certain: space is brutal on the human body. Muscles atrophy, bones lose mass, limbs stretch and – more unknown – eyesight can degrade in ways not yet fully understood.

To better understand the loss of vision caused by space flight, UC San Diego researchers used U.S. National Science Foundation (NSF) ACCESS allocations on the Expanse system at the San Diego Supercomputer Center (SDSC) to predict who is most at risk for developing eyesight issues – before liftoff. The team led by researchers at the Shiley Eye Institute and Viterbi Family Department of Ophthalmology in collaboration with the Halıcıoğlu Data Science Institute (HDSI) at the UC San Diego School of Computing, Information and Data Science used artificial intelligence (AI), trained on high resolution eye scans, to predict individuals at highest risk.

According to NASA, around 29 percent of crew members who participated in short-duration space flights reported a degradation of distance or near-visual acuity. For crew members in long-duration missions, that number spiked to 60 percent. In 2017, scientists first used the name Spaceflight Associated Neuro-ocular Syndrome (SANS) to describe this vision degradation caused by space flights. While symptoms – including optic nerve head swelling (the optic nerve connects the eye to the brain), vision shifts and structural distortions – often resolve within weeks to months post-flight, in some cases they do not resolve for years after long-duration missions.

Alex A. Huang, MD, PhD
Mark Christopher, PhD

"Our models showed promising accuracy, even when trained on limited data," said lead author **Alex A. Huang, MD, PhD**, Professor of Ophthalmology in the UC San Diego Viterbi Family Department of Ophthalmology and the Alfred Vogt Endowed Chair in Ophthalmology. "We're essentially using AI to give doctors a predictive tool for a condition that develops in space, before astronauts even leave Earth." He added that tools such as the one his team developed can support risk management and, in the future, preventative measures prior to launch.

The AI system was trained using optical coherence tomography (OCT) scans – microscope-like images of the optic nerve – collected before and during space flight. The researchers also used data from head-down tilt bedrest studies on Earth. In this procedure, participants lay in a continuous six-degree head-down tilt, 24-hours a day, mimicking the effects of weightlessness by shifting fluids toward the head.

To overcome the challenge of limited astronaut data, the team used deep learning – a form of AI that mimics how the brain processes images. They broke each eye scan into thousands of slices, creating a much larger dataset for training the models. The researchers also used data augmentation and transfer learning, which help the AI generalize from small samples.

Then, with the help of NSF ACCESS allocations on SDSC's Expanse system, the team trained and tested their models. The best version could predict SANS with up to 82 percent accuracy, using only preflight scans. Even models trained on Earth-based bedrest data performed well, suggesting that SANS-like changes in these simulations closely mirror changes in actual spaceflight.

"One of the most exciting findings was how similar the AI's attention patterns were across both space and Earth data," said **Mark Christopher, PhD**, Assistant Project Data Scientist in the Viterbi Family Department of Ophthalmology and co-author of the study. "This strengthens the case for using Earth-based models to study space health – a promising development towards advancing human spaceflight research."

To better understand what the AI was "seeing," the researchers used class activation maps – visual heatmaps that highlight areas of interest. The models consistently focused on specific eye layers involved in fluid balance and pressure – like the back of the eye's retinal nerve fiber layer and retinal pigment epithelium – giving scientists new clues about the biology behind SANS.

While the researchers caution that their models are not yet ready for clinical use, they see enormous potential in future versions. These AI tools could one day help NASA personalize astronaut care, guide countermeasure development and even predict the severity of optic changes during future long-term spaceflight missions.

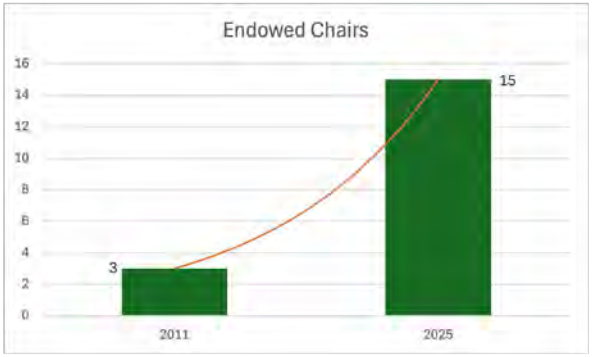
"The results and models from this study are early, but it's a strong foundation," Huang said. "With more data and refinement, this could become an essential part of astronaut health planning."

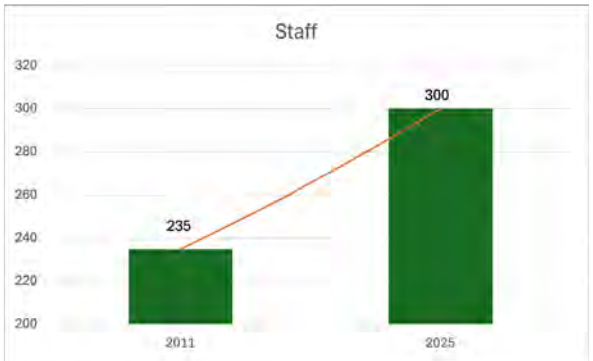
This research was supported by NASA's Human Research Program, the National Eye Institute, and the Research to Prevent Blindness.

15 Years as Chair: Robert N. Weinreb, MD

Under the leadership of **Robert N. Weinreb, MD**, Ophthalmology at UC San Diego has been transformed. Chair of the UC San Diego Viterbi Family Department of Ophthalmology and Director of the Shiley Eye Institute (SEI), he is also Distinguished Professor of Ophthalmology and Bioengineering (affiliate), as well as holds the Morris Gleich, MD Chair in Glaucoma. In 2011, Weinreb replaced outgoing chair Stuart I. Brown, MD.

Under Weinreb's tenure as chair, fulltime faculty has grown 50% (to 44) and staff has grown 30% (to 300). Significantly, Endowed Chairs have grown 400% (to 15). With generous support from both Darlene V. Shiley and UC San Diego Health, Weinreb recently oversaw the renovation of the second floor of the Eye Center and the addition of 25 high tech examination rooms for retina and glaucoma, dedicated ophthalmic procedure rooms, a refractive laser center and expanded patient waiting areas.





Weinreb's efforts have resulted in numerous transformative private donations for the Department.

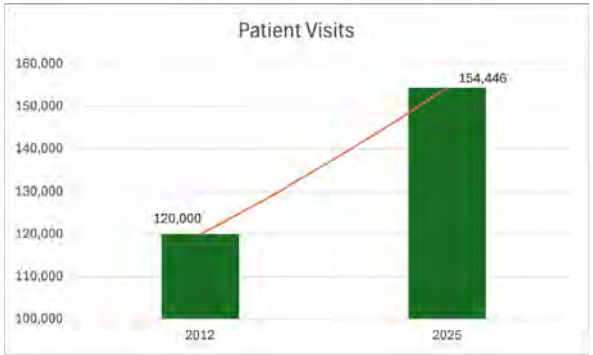
During just the past few years, these include:

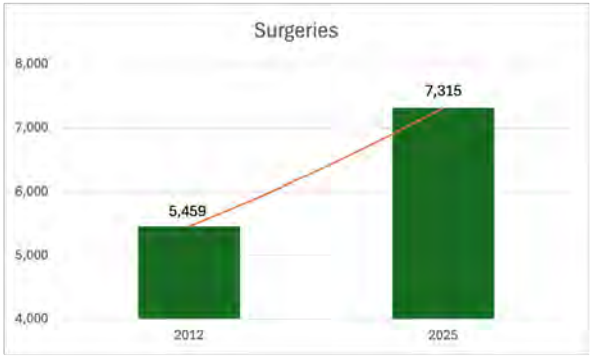
- **2018:** Andrew Viterbi - named the Viterbi Family Department of Ophthalmology, Viterbi Family Vision Research Center and 6 Viterbi Family Endowed Chairs.
- **2018:** Patricia Shiley - supported the Shiley EyeMobile for Children, Patricia Shiley Low Vision Evaluation Clinic and the Stuart I. Brown Chair in Ophthalmology in Memory of Donald P. Shiley.
- **2019:** Frances Hamilton White - supported Glaucoma Research under the direction of Robert N. Weinreb, MD.
- **2021**: Janine and Brandon Nixon through the Nixon Visions Foundation - supported retinal dystrophy genetic studies and laboratory research to cure PRPH2 under the direction of **Shyamanga Borooah, MD, PhD** and **Radha Ayyagari, PhD**.
- **2022**: Darlene V. Shiley - renovated the Shiley Eye Center second floor.
- **2022:** Hanna and Mark Gleiberman - created the Hanna and Mark Gleiberman Glaucoma Research Center.
- **2023**: Dr. Bruce and Janet Lawrence - created an Adult EyeMobile Program.
- **2024:** The Baier Family Trust - supported retinal research under the direction of **Shyamanga Borooah, MD, PhD**.
- **2025:** Hanna and Mark Gleiberman - supported Retinal Vascular Biology Research in the Viterbi Family Vision Research Center under the direction of **Eric Nudleman, MD, PhD**.
- **2025**: Al Blum and Sari Simchoni - supported the vision research of **Eric Nudleman, MD, PhD** and Richard Daneman, PhD in the Viterbi Family Vision Research Center.

Initiated by a $50 million gift from Andrew J. Viterbi, PhD in August 2018, Weinreb oversaw the planning and construction of the newly opened 100,000 square foot Viterbi Family Vision Research Center that includes research laboratories, clinical trial space for gene and stem cell therapies and an Education Center. Research at the Center is focused on developing treatments to restore vision and cure blinding eye diseases including glaucoma and retinal degeneration.

"I am so proud to have led the Viterbi Family Department of Ophthalmology and the Shiley Eye Institute during this pivotal time in our history. I have been focused on protecting and restoring the vision of countless individuals with blinding eye diseases from within our community and from across the globe," said Weinreb.

"Our researchers and clinicians are recognized as being among the very best in the world, and we intend to have even greater impact by more closely linking breakthrough vision research and exceptional eye care to focus on personalized disease prevention and management".





(Pictured top to bottom, left to right):

Robert N. Weinreb, MD with Darlene V. Shiley
SEI Second Floor Clinic Renovation 2025

Stuart I. Brown, MD, Darlene V. Shiley and Robert N,. Weinreb, MD
UC San Diego Lifetime Legacy Award Honoring Darlene Shiley 2024

Patty Maysent, Darlene V. Shiley and Robert N. Weinreb, MD
Dinner Celebration in honor of Darlene V. Shiley 2022

Robert N. Weinreb, MD, Andrew J. Viterbi, PhD, and Pradeep Khosla, PhD
Viterbi Celebration 2019

Robert N. Weinreb, MD with Hanna and Mark Gleiberman
SEI Glaucoma Update 2023

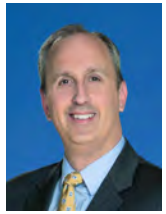
Recruitment of Current Faculty Over the Past 15 Years


2012


2012


2014


2015


2016

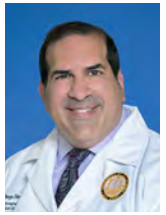

2017


2018


2018


2019

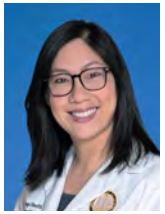

2019


2019


2019


2019

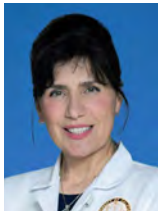

2019


2020


2021


2022


2022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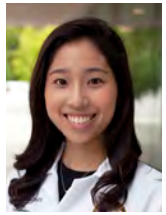
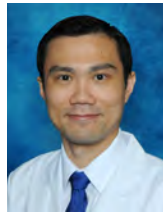

2024


2025


2025

(Pictured left to right, top to bottom):

Natalie Afshari, MD
Napoleone Ferrera, MD
Eric Nudleman, MD, PhD
Karl Wahlin, PhD
Derek Welsbie, MD, PhD
Andrew Camp, MD
Jiun Do, MD, PhD
Catherine Liu, MD, PhD
Sasan Moghimi, MD
Shyamanga Borooah, MD, PhD
Mansoor Movaghar, MD
Lanning Kline, MD
Jolene Rudell, MD, PhD
Doran Spencer, MD, PhD
Sally Baxter, MD, MSc
Alex Huang, MD, PhD
Nathan Scott, MD, MPP
Christopher Toomey, MD, PhD
Cristiana Vasile, MD, MAS
Manuel Puig-Llano, MD
Lauren Hennein, MD
Mark Christopher, PhD
Christopher Girkin, MD, MSPH
Maya Yamane, MD
Jacob Heng, MD, PhD
Rebecca Lian, MD

UC San Diego Glaucoma Leadership on the Map

Glaucoma Division Chiefs - Southern California

Sameh Mosaed, MD | UC Irvine
Benjamin Y. Xu, MD, PhD | University of Southern California
Kouros Nouri-Mahdavi, MD, MSc | University of California, Los Angeles
Robert N. Weinreb, MD | UC San Diego

Australia
Mark Loane, MD | Brisbane
Jonathan Crowston, MD, PhD | Sydney

Austria
Clemens Strohmaier, MD, PhD | Linz

Brazil
Ivan Tavares, MD | Sao Paolo

Canada
Neeru Gupta, MD, PhD | Vancouver
Yeni Yücel, MD, PhD | Toronto

China
Ningli Wang, MD, PhD | Beijing
Chris Leung, MD | Hong Kong
Yi Dai, MD | Shanghai

Egypt
Tarek El Beltagi, MD | Cairo

United Kingdom
Wojciech Karwatowski, MD | Bristol
Rupert Bourne, MD | Cambridge
Andrew Tatham, MD | Edinburgh

Germany
Andreas Boehm, MD | Dresden
Nils Loewen, MD, PhD | Frankfurt
Esther Hoffmann, MD | Mainz

India
Harsha Rao, MD | Bengaluru
Tutl Chakravarti, MD | Kolkata

Israel
Eytan Z. Blumenthal, MD | Haifa
Dan Gaton, MD | Tel Aviv
Moshe Lusky, MD | Tel Aviv

Japan
Atsuya Miki, MD, PhD | Nagoya
Makoto Aihara, MD, PhD | Tokyo
Teruyo Kida, MD, PhD | Tokyo
Kenji Kashiwagi, MD | Yamanashi
Takuhei Shoji, MD, PhD | Morohongo
Takeshi Sagara, MD, PhD | Yamaguchi

South Korea
Min Hee Suh, MD, PhD | Busan
Dong Myung Kim, MD | Seoul
Tae Woo Kim, MD | Seoul
Haksu Kyung, MD, PhD | Seoul
Dong Myung Kim, MD, PhD | Seoul
Sang Woo Park, MD | Chonnam

Spain
Alfonso Anton, MD | Barcelona

Switzerland
Kaweh Mansouri, MD | Lausanne

Thailand
Somkiat Asawaphureekorn, MD | Khon Kaen
Nuttamon Srisamran, MD | Bangkok

United States
Chris Girkin, MD, MPH | University of Alabama, Birmingham
Robert Fechtner, MD | State University of New York
Robert Feldman, MD | University of Texas, Houston
Felipe Medeiros, MD, PhD | Bascom Palmer
Arthur Sit, MD, MS | Mayo Clinic
Syril Dorairaj, MD | Mayo Clinic
Brandon Wong, MD | Los Angeles
Steven Mansberger, MD, MPH | Devers Eye Institute
Gianmarco Vizzeri, MD | University of Texas, Galveston
Mohsen Adelpour, MD | University of Arkansas, Little Rock

Distinguished Alumnus: Robert Fechtner, MD

Robert Fechtner, MD is Professor and Chair of Ophthalmology and Vision Sciences at the State University of New York in Syracuse. He was a 1989-1991 Glaucoma fellow in the UC San Diego Department of Ophthalmology.

Fechtner received his medical degree at the University of Michigan School of Medicine and completed his residency at the Albert Einstein College of Medicine in Bronx, NY. He pursued research fellowships in glaucoma at the New England Medical Center in Boston, MA and the Montefiore Medical Center in Bronx, NY as well as the Glaucoma Fellowship at UC San Diego. Following his education, he became an Associate Professor at the University of Louisville (1991-1998) and went on to become a Professor of Ophthalmology and Director Glaucoma Division at the Rutgers New Jersey Medical School (1998-2016.)

When asked why Fechtner went into medicine, he stated, “I cannot remember a time when I did not imagine I would be a doctor. I am one of four boys and we all went into medicine - a mother’s dream! We grew up believing that medicine was an intellectually stimulating field where we could bring value to our community. I still feel that way. A chance meeting on a beach with a family of ophthalmologists stirred my interest. What a remarkable, complex and organized system brings vision into our lives. I still love what I do as a glaucoma specialist.”

While Fechtner was training at UC San Diego, “There was no Shiley Eye Institute when I started as a glaucoma fellow. The practice worked out of some double wide trailers as the Shiley Eye Center was being constructed.”

“When I think about how working with **Robert N. Weinreb, MD** shaped my career two things stand out. He had an innate ability to see what was coming next. I worked with confocal laser scanners before anyone else in ophthalmology knew what they were. I also embraced the idea that you have to be a contributor to the progress of the future. I know that is why I chose a path that led me to become a chair” said Fechtner.

In response to being asked if Fechtner had any words of wisdom for our current ophthalmology students, he stated, “I think the best advice I ever got came from a general surgeon while I was in medical school - pick something you love to do and you will spend more waking hours practicing medicine than doing anything else in your life. Love it!" He added, “And find a group of friends and support one another. I have gained so much from my “IOP” friends.”

When not working, he is a life-long classical musician. “It takes a different part of the brain. But no one has ever said, ‘Rob, why don’t you come over and bring your French horn.’ Guitar might have been more social” reflected Fechtner.

Distinguished International Alumnus: Kaweh Mansouri, MD, MPH

Kaweh Mansouri, MD, MPH, 2010-2012 UC San Diego Hamiliton Glaucoma Center glaucoma fellowship alumnus, is currently consultant physician and deputy medical director at Swiss Visio Network in Lausanne Switzerland. He is also the Executive Vice President of the World Glaucoma Association.

Mansouri attended the University of Lausanne and received his medical degree from the Medical University of Vienna. He also pursued a Master of Public Health degree from the University of Geneva before coming to UC San Diego.

Mansouri's career started as the Chief Medical Officer at Sensimed SA and later went on to iSTAR Medical. He is currently an Adjunct Professor of Ophthalmology at the University of Colorado and Chief Medical Officer at Implandata Ophthalmic Products.

From a young age, Mansouri realized, "that he admired physicians' ability to preserve and improve the most important good we all have - our health. Ophthalmology was particularly appealing to me because of the complexity and beauty of the eye, the precision of its surgeries, and this discipline's very high success rates, compared to other specialties."

Reflecting on Mansouri's time at UC San Diego, "My fellowship at the Hamilton Glaucoma Center was a pivotal moment in my career. I was fortunate to experience glaucoma research at its most advanced state and clinical glaucoma at its finest. Ever since, I have tried to bring those learnings to my current work setting and to transmit the "UC San Diego glaucoma mindset" to my younger colleagues.

Mansouri added, “I would say that human encounters – whether with mentors such as **Robert N. Weinreb, MD**, with colleagues, or with patients – have profoundly influenced my path. Every important decision has been driven by one conviction: that research can concretely improve the lives of people affected by glaucoma.”

When asked if Mansouri had any words of wisdom for our future trainees, he stated, “I would first tell them to remain curious and engaged, because this is a specialty that is constantly evolving. They should not hesitate to train in research, to ask questions, to collaborate beyond their own discipline.”

Mansouri went on say, “Ophthalmology offers an exceptional field for innovation, whether in imaging, genetics or artificial intelligence. I would also tell them to always keep in mind that every advance, no matter how technical, must serve the patient. Finally, I would advise them not to limit themselves to a 42-hour workweek, because this is not enough to truly learn the art and science of medicine, and not to subscribe to the futile trend of work-life balance.”

Mansouri noted that currently, “Several projects are particularly close to my heart, but one of the most promising concerns the development of implantable intraocular pressure sensors that we have developed together with UC San Diego. These devices could revolutionize glaucoma monitoring by providing continuous and precise tracking of pressure inside the eye, thereby allowing treatments to be adjusted in real time.”

In addition, Mansouri stated “I am deeply involved in research on minimally invasive glaucoma surgery, which aims to reduce risks and improve patient recovery while effectively controlling the disease. To me, these two areas represent major advances in improving patient care and quality of life.”

When Mansouri is not working, he enjoys reading newspapers (still on paper), spending time with his family, swimming in the Mediterranean and skiing in the Swiss Alps.

Kaweh Mansouri, MD, MPH
Hiking the Aletsch Glacier in Switzerland, the Largest of the Alps

Faculty Spotlight: David B. Granet, MD, MHCM

David B. Granet, MD, MHCM, FACS, FAAO, FAAP, is Professor of Ophthalmology and Pediatrics, inaugural Anne Ratner Chair of Pediatric Ophthalmology and Director of the Anne F. Ratner and Abraham Ratner Children's Eye Center. He has been at the Shiley Eye Institute and Viterbi Family Department of Ophthalmology for over 32 years.

Granet earned a medical degree from Yale University School of Medicine and spent a transitional internship year at UCLA-Harbor Medical Center. He completed his residency at New York University Medical Center. He then completed a special two-year fellowship in pediatric ophthalmology and ocular motility disorders at Children's Hospital of Philadelphia and the Scheie Eye Institute of the University of Pennsylvania Medical Center. More recently, Granet returned to the classroom and earned a Master's Degree in Health Care Management at Harvard University.

Granet specializes in pediatric ophthalmology and adult re-alignment (strabismus). His clinical interests also include state-of-the-art adjustable suture strabismus surgery, childhood eye misalignments and disorders, nystagmus, and the role of vision in learning disorders.

WHY DID YOU GO INTO MEDICINE?

Raised with the belief in making a difference, I know the talents we have been given are gifts we have to use through hard work to make the world a better place. I realized as an undergraduate at the University of Pennsylvania, that the practice of medicine was the right direction for me. I could combine academic knowledge and science with the ability to fix things and help people. As the son of two professors, teaching, innovation and answering questions are in my blood. It is a privilege to care for children and adults with complex eye conditions, always striving to make the world brighter, one patient at a time. I genuinely love what I get to do and feel blessed to have found my calling.

HAVE ANY OF YOUR PATIENTS AFFECTED YOU SIGNIFICANTLY?

Every patient shapes me, but some stories are unforgettable. Strabismus can affect self-esteem in addition to the visual issues. Many of our patients are changed after surgery, with eyes aligned and blossom into confident people. The notes we get of gratitude remind me why I do this – it is not just about fixing eyes but changing lives. There are patients I knew as babies that now are adults with families of their own who come back for me to see their children. That trust means so much to me and the team at Ratner. These moments humble me and fuel my commitment to generous, empathetic care.

WHAT ARE YOUR MOST IMPORTANT TEACHING CONTRIBUTIONS?

Mentoring countless residents and fellows has been a privilege, recognized by the departmental 2025 Award for Outstanding Didactic Teaching - Faculty and the Lifetime Achievement Award from the American Association for Pediatric Ophthalmology and Strabismus. My "Health Matters" series has educated millions on their health and our COVID-era webinars have garnered over 500,000 views. Research on convergence insufficiency and ADHD, with nearly 3,000 citations, and publications on strabismus surgery have shaped global practices, always aiming to stimulate curiosity in others. What has been great is igniting others to answer questions and teaching them how to do so

WHAT DO YOU DO IN YOUR FREE TIME – FAMILY?

My greatest joy is family time with my amazing wife, Lisa and our three sons, Elijah, Isaiah, and Ezra. We love hiking San Diego's trails, playing board games, and cheering at their sports events. Our labradoodle, Messie, joins the fun on beach outings. They keep me grounded and grateful; family is my anchor and inspiration.

Bill Ramirez
Celebrating 30 Years @ SEI

In July 2026, the Shiley Eye Institute (SEI) will say a bittersweet farewell and happy retirement to beloved Technician Lead, Bill Ramirez, COA. For over 30 years, Ramirez has worked alongside specialists in providing exceptional patient care, teaching and training fellow staff, as well as creating meaningful patient relationships every day. He has been instrumental in helping the department navigate through many major challenges, including a global pandemic, clinic remodels and expansion, while remaining one of SEI's most respected and impactful team members.

Ramirez began his ophthalmology career at St. John's Hospital in Tucson, Arizona before returning to his hometown, San Diego in 1994 to join SEI. Reflecting on the changes he has witnessed, Ramirez recalls when SEI had only a handful of technicians and saw about one hundred patients daily. Since then, SEI has grown with new specialty clinics and locations, serving far more patients while continuing to provide excellent care. Drawing from his experiences working with **Robert N. Weinreb, MD,** Chair and Director, faculty members **Michael Goldbaum, MD, and Stuart I. Brown, MD**, he emphasizes the importance of listening to patients to find the root of their problem and assessing how best to help them.

When asked what has kept him at SEI for over 30 years, Ramirez says, "It's the relationships you build with the attendings and patients. The work is very rewarding because you get to make a difference in patients' lives."

As Ramirez steps into retirement, SEI celebrate his remarkable career and heartfelt commitment. His contributions have left a lasting impact on both patients and colleagues, and SEI thanks him for his incredible service while wishing him all the best in his well-earned retirement.

Accolades

Natalie A. Afshari, MD, Professor of Ophthalmology, is recipient of the 2024 American Academy of Ophthalmology Life Achievement Honor Award. This award recognizes her scientific and educational program contributions in the field of ophthalmology.

Shira L. Robbins, MD, Professor of Clinical Ophthalmology, is the recipient of the Suzanne Véronneau-Troutman Award at the 2025 American Academy of Ophthalmology Annual Meeting. This award honors female ophthalmologists who have shown exceptional dedication to advancing the profession and paving the way for future generations of women in ophthalmology. She was selected for this recognition by the Women in Ophthalmology (WIO) Board of Directors, WIO Nominations Committee, American Academy of Ophthalmology Foundation, and Dr. Suzanne Véronneau-Troutman.

Sally L. Baxter, MD, MSc, Associate Professor of Ophthalmology, is the 2025 recipient of the UC San Diego Health Sciences Faculty Excellence in Mentoring Award. This honor is in recognition for her outstanding mentorship of future leaders in academic medicine.

In addition, Baxter and her research team including university collaborators won "Most Likely to be Published" at the UC San Diego Health Data Science Day Hackathon for their project, "Are weight loss drugs associated with an increased risk of blindness?"

David B. Granet, MD, MHCM, Professor of Ophthalmology and Pediatrics, is the May 2025 recipient of the UC San Diego Health Physician Professionalism Award. He was nominated for providing outstanding patient care, demonstrating inclusive leadership and for his dedication to mentoring the next generation of clinicians.

Don O. Kikkawa, MD, Distinguished Professor of Clinical Ophthalmology and Distinguished Professor of Clinical Surgery (Plastic Surgery), **Bobby S. Korn, MD, PhD**, Professor of Clinical Ophthalmology and Professor of Clinical Plastic Surgery, and **Jeffrey E. Lee, MD**, Associate Professor of Clinical Ophthalmology, were recognized on the "2025 Top Doctors" list by *San Diego Magazine* in the ophthalmology specialty.

Highlighted Publications

Possible Path to Reverse Early AMD

Christopher B. Toomey, MD, PhD, in collaboration with Jeffrey D. Esko, PhD, led a study published in *Proceedings of the National Academy of Sciences.* The innovative research points to a possible way to prevent and even reverse early signs of age-related macular degeneration (AMD) before vision loss occurs. Research focused on lipoproteins involved in forming drusen, clumps of lipids and proteins that collect between layers at the back of the eye and are a hallmark of early AMD. Findings suggest that heparan sulfate in Bruch's membrane at the back of the eye, plays a key role in trapping lipoproteins that lead to drusen formation. Targeting this interaction may offer a new path to early AMD treatment and prevention. This study was also featured in a UC San Diego Today article.

Christopher B. Toomey, MD, PhD, et. al, Proceedings of the National Academy of Sciences, June 13, 2025

New Link Found Between Good Cholesterol and AMD

Christopher B. Toomey, MD, PhD, in collaboration with **Sally L. Baxter, MD, MSc,** led a study that examined the link between cholesterol and age-related macular degeneration (AMD). Researchers evaluated the genomic data from the National Institutes of Health's All of Us Research Program. Results suggest that both low and high high-density lipoprotein (HDL) – good cholesterol – levels are linked to an increased risk of developing AMD. The study was published in *Ophthalmology*, the journal of the American Academy of Ophthalmology. Toomey also commented on findings in *MedPage Today*.

Christopher B. Toomey, MD, PhD, Sally L. Baxter, MD, MSc, et. al, Ophthalmology, Volume 132, Issue 6, Pages 684-691, June 2025

Glaucoma Risk and GLP-1R

In a study published in the *American Academy of Ophthalmology* August 2025 issue, **Robert N. Weinreb, MD** and **Alex A. Huang, MD, PhD** investigated the risk of glaucoma and ocular hypertension in individuals without diabetes using glucagon-like peptide 1 receptor agonist (GLP-1Ras) for weight loss compared to alternative weight loss medications. Results suggest that patients without diabetes who use GLP-1Ras may have a lower risk of primary open-angle glaucoma and ocular hypertension compared to those using alternative weight-loss therapies, measured at the three-and five-year marks.

Robert N. Weinreb, MD, Alex A. Huang, MD, PhD, et. al, American Academy of Ophthalmology, Volume 132, Issue 8, Pages 859-868, August 2025

Blood Pressure and Visual Field Connection

Robert N. Weinreb, MD led a study published in *JAMA Ophthalmology* that investigated the long-term variability of blood pressure associated with visual field (VF) progression in patients with glaucoma. Findings suggest that long-term blood pressure variability and high blood pressure may be associated with VF loss in patients with glaucoma.

This study was also featured in an article in the March 2025 issue of *EyeNet Magazine* from the American Academy of Ophthalmology. In this article, Weinreb discusses the study and outlines what future research is needed. Shiley Eye Institute faculty who also contributed to this study include **Sasan Moghimi, MD, Christopher Girkin, MD, MSPH**, and **Linda M. Zangwill, PhD**.

Robert N. Weinreb, MD, et. al, JAMA Ophthalmology, May 8, 2025

New Gene Therapy Protects Vision in Glaucoma

Wonkyu Ju, PhD, in collaboration with **Robert N. Weinreb, MD**, led a study published in *Science Direct* that identified a pivotal role for apolipoprotein A-I binding protein (AIBP) in protecting retinal ganglion cells (RGCs) and Müller glial cells. They demonstrate that AIBP regulates cholesterol levels and suppresses harmful inflammation – two critical drivers of glaucoma progression. In retinal tissues from glaucoma patients and mouse models of glaucoma, AIBP levels were reduced. This led to abnormal cholesterol accumulation, RGC degeneration and optic nerve damage. To counter these effects, the team administered a single gene therapy injection of AAV-AIBP directly into the glaucomatous eye of a mouse. The treatment restored cholesterol homeostasis, reduced inflammation, promoted RGC survival, and preserved Müller glial cells – ultimately protecting vision.

Wonkyu Ju, PhD, Robert N. Weinreb, MD, et. al, Science Direct, Volume 33, Issue 8,, Pages 3841-3862, August 2025

Highlights

Sally L. Baxter, MD, MSc, Associate Professor of Ophthalmology, shared glaucoma research findings – using data from the NIH All of Us Research Program – with San Ysidro Health collaborators. The work was part of the Todos Juntos grant program, funded by the National Alliance for Hispanic Health.

In addition, Baxter was featured in "The Young Ophthalmologists Issue" of "*CAKE*" magazine in an article titled "Bridging AI and Eye Care," and in *San Diego Voyager* magazine titled "Meet Sally Baxter of San Diego." Both articles explore her journey into ophthalmology and the important work that she is doing.

William R. Freeman, MD, Distinguished Professor of Ophthalmology, was featured in the 2025 issue of the UC San Diego Health Sciences magazine *Discoveries* for his collaboration with UC San Diego electrical engineering graduate students in Truong Nguyen's lab for the past five years. The goal of this partnership has been to develop better computer vision, artificial intelligence (AI) and image-processing tools to help physicians diagnose patients faster and more accurately predict which drugs will be most effective for specific patients and even aid in the process of developing new therapeutic treatments for retinal diseases.

Christopher B. Toomey, MD, PhD, Assistant Professor of Clinical Ophthalmology, shared his insights in a Health Central article discussing an implantable eye device for those with diabetic macular edema.

Bobby S. Korn, MD, PhD, Professor of Clinical Ophthalmology, was featured in a *UC San Diego Today* for his work on a young boy from Las Vegas who had a condition that prevented proper eye closure, resulting in the boy being unable to blink properly and having to sleep with his eyes open. Korn preformed a successful surgery that enabled the boy to blink for the first time in years and sleep with his eyes closed.

Jolene Rudell, MD, PhD, Assistant Clinical Professor of Ophthalmology, was interviewed on the American Academy of Pediatric Ophthalmology and Strabismus podcast, "Little Eyes, Big Topics", where she discussed her career journey and research projects.

Faculty

Every year, Shiley Eye Institute specialists are honored to be named as being “the best” by major national and local organizations.

The Ophthalmologist
Expertscape
Castle Connolly
San Diego Magazine TOP Doctors
Healthgrades
U.S. News & World Report
Best Doctors
SuperDoctors
Newsweek
WebMD

Glaucoma

Robert N. Weinreb, MD

Chair & Distinguished Professor, Viterbi Family Department of Ophthalmology

Director, Shiley Eye Institute

Division Chief, Glaucoma

Christopher Bowd, PhD

Mark Christopher, PhD

Christopher Girkin, MD, MSPH

Alex A. Huang, MD, PhD

Won-Kyu "Daniel" Ju, PhD

John H. K. Liu, PhD

Sasan Moghimi, MD

Cristiana Vasile, MD

Derek Welsbie, MD, PhD

Linda Zangwill, PhD

Comprehensive Ophthalmology

Jeffrey E. Lee, MD

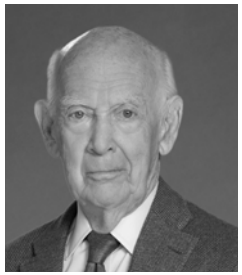
Rebecca Lian, MD

Thao P. Nguyen, MD

Manuel Puig-Llano, MD

Cornea

Natalie A. Afshari, MD
Division Chief
Vice Chair



Stuart I. Brown, MD

Weldon W. Haw, MD

Christopher W. Heichel, MD

Informatics & Data Science

Sally Baxter, MD, MSc
Division Chief

Neuro-Ophthalmology

Lanning B. Kline, MD

Peter J. Savino, MD

Ocular Oncology

Nathan Scott, MD, MPP
Divison Chief

Oculoplastics

Don O. Kikkawa, MD
Division Chief
Vice Chair

Bobby S. Korn, MD, PhD

Catherine Y. Liu, MD, PhD

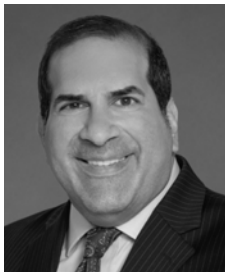
Ocular Pathology

Napoleone Ferrara, MD

Pediatric Ophthalmology

David B. Granet, MD
Division Chief
Vice Chair

Lauren Hennein, MD



Mansoor Movaghar, MD

Shira L. Robbins, MD

Jolene Rudell, MD, PhD

Maya Yamane, MD

Regenerative Ophthalmology

Karl J. Wahlin, PhD

Retina

Radha Ayyagari, PhD

Dirk-Uwe G. Bartsch, PhD

Shyamanga Borooah, MD, PhD

Henry A. Ferreyra, MD

Jacob Heng, MD, PhD

Retina

William R. Freeman, MD
Division Co-Chief
Vice Chair

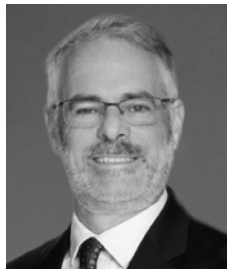
Michael H. Goldbaum, MD

Eric Nudleman, MD, PhD
Division Co-Chief

Peter Shaw, MD

Christopher Toomey, MD, PhD

Uveitis



Doran Spencer, MD, PhD

Optometry & Low Vision

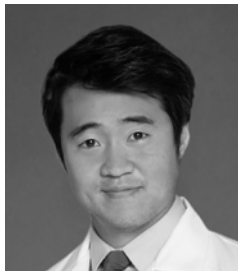
John F. Kulischak, OD
Supervisor

Amber Candelaria, OD

Maria Laura Gomez, OD

Lara Hustana, OD

Caitlin Jomoc, OD



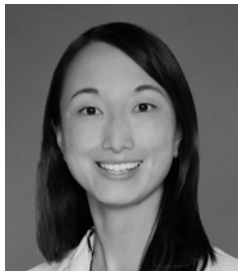
Philip Kim, OD

Esmeralda McClean, OD

Lianne Mizoguchi, OD

Tracy Moor, OD

Charmine Trajano, OD



Carol Yu, OD

Residents

The UC San Diego Shiley Eye Institute (SEI) and the Viterbi Family Department of Ophthalmology's highly selective Ophthalmology Residency Program annually attracts over 600 applications from across the country, with only four positions available. This demand highlights the program's exceptional reputation for delivering comprehensive clinical and surgical training, as well as fostering a commitment to compassionate patient care and scholarly excellence.

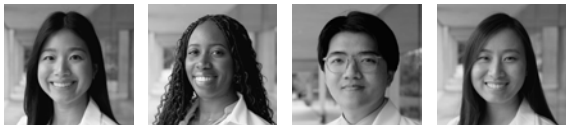
SEI is proud to mentor some of the brightest and most driven students, who consistently excel both during and after their training. As a testament to their skills and dedication, graduates frequently secure coveted fellowship positions in Ophthalmology subspecialties, including Cornea, Glaucoma, Ophthalmic Plastic and Reconstructive Surgery, and Retina at SEI and beyond.

Under the mentorship of distinguished faculty, residents gain hands-on experience treating a wide spectrum of eye conditions, from routine cases to the rarest diseases. They are also encouraged to pursue research opportunities with many presenting their innovative work at prestigious national conferences, including the American Academy of Ophthalmology and the Association for Research in Vision and Ophthalmology.

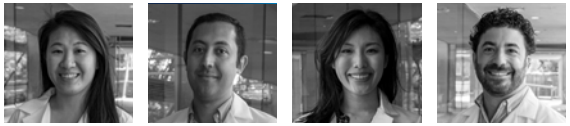
The UC San Diego Ophthalmology Residency Training Program has been recognized by the national accrediting body, the Accreditation Council for Graduate Medical Education, with a commendation on the excellence of the Residency Program and its faculty.

PGY-4

PGY-3



PGY-2



PGY-1

PGY-4
Jimmy S. Chen, MD
Michael Saheb Kashaf, MD, MSc
Rebecca Lian, MD
Alexander Svoronos, MD, PhD

PGY-3
Alison Chan, MD
Skenda Jean-Charles, MD
Justin Ma, MD
Elaine Tran, MD

PGY-2
Jennifer Bu, MD
Alireza Kamalipour, MD, MPH
Tonya Lee, MD
Kyle Marra, MD, PhD

PGY-1
Christy Campla, MD, PhD
Margaret Havunjian, MD MPH
Timothy Kim, MD
Anna Mueller, MD

Fellows 2024 - 2025

The UC San Diego Shiley Eye Institute and Viterbi Family Department of Ophthalmology offers world-class fellowships in cornea, glaucoma, ophthalmic plastic and reconstructive surgery, pediatric ophthalmology, and retina. Post-doctoral fellows receive expert training in both clinical and research settings, preparing them to excel in their fields. Many go on to assume prominent academic positions worldwide, while others become leading clinicians in the global ophthalmic community.

Glaucoma

Cornea

Informatics & Data Science

Oculoplastics

Pediatric Ophthalmology

Retina

Glaucoma
Tonking Bastola, PhD
Seunghwan Choi, PhD
Maria Paula Garcia, MD
Gopikasree “Gopika” Gunasegaran, MD
Briggs Hoyt, MD
Jalil Jalili, PhD
Esther Jang, PhD
Zacharia Nayer, MD
Ghazaleh Soltani, MD
Daniel Wanderer, DVM

Cornea
Jessica Hsueh, MD
Jonathan Peterson, MD

Informatics & Data Science
Byoungyoung Gu, MD
Shahin Hallaj, MD
Kiana Tavakoli, MD

Oculoplastics
Mahmoud Abouletta, MBChB
Eman Al-Sharif, MBBS
Rolika Bansal, MD
Nahia Dib El Jalbout, MD
Marissa Shoji, MD

Pediatric Ophthalmology
Dario Marangoni, MD, PhD

Retina
Akshay Agnihotri, MS
Justin Arnett, MD
Malvika Arya, MD, PhD
Anna Heinke, MD, PhD
Jennifer Hernandez, PhD
Fritz Kalaw, MD
Nehal Mehta, MBBS
Ines Nagel, MD
Daniel Vail, MD
Alexandra Warter, MD
DaNae Woodard, PhD

Not Pictured:
Hyun Kyung Cho, MD, PhD
Sinwoo Hwang, MS, PhD

Graduation

On June 17, 2025, the Viterbi Family Department of Ophthalmology and Shiley Eye Institute graduated outstanding residents and fellows with an in-person ceremony at the UC San Diego Ida and Cecil Green Faculty Club.

Graduating Residents

Jimmy S. Chen, MD (Chief)
Massachusetts Eye and Ear Institute, Harvard University (Retina)

Michael Saheb Kashaf MD, MSC (Chief)
Stein Eye Institute, UCLA (Glaucoma)

Rebecca Lian, MD
Shiley Eye Institute, UC San Diego (Public Health)

Alexander Svoronos, MD, PhD
Bascom Palmer Eye Institute, University of Miami (Ocular Oncology)

We are so proud of our graduating Residents and Fellows going on to new careers or furthering their education at prestigious academic medical centers.

Graduating Fellows

Jessica Hsueh, MD (Cornea)
Faculty, University of Southern California

Jonathan Peterson, MD, MS (Cornea)
Las Vegas

Briggs Hoyt, MD (Glaucoma)
Eye Physicians & Surgeons of Arizona and Faculty, Phoenix Veterans Affairs, University of Arizona

Zacharia Nayer, MD (Glaucoma)
Azul Vision, Oceanside, California

Rolika Bansal, MD (Oculoplastics)
Mahatma Gandhi Medical College and Hospital, Jaipur, Rajasthan, India

Marissa K. Shoji, MD (Oculoplastics)
Faculty, Bascom Palmer Eye Institute, University of Miami

Justin Arnett, MD (Retina)
ReFocus Eye Health, New Jersey

Malvika Arya, MD, PhD (Retina)
AdvantageCare Physicians, New York

(Pictured top to bottom, left to right):

2025 Graduating Residents

2025 Graduating Fellows

Lamont Ericson, MD Award recipient Michael Saheb Kashaf, MD, MSc with faculty members Andrew Camp, MD, Natalie A. Afshari, MD, and Jeffrey E. Lee, MD.

Graduation Awards

The tenth annual Lamont Ericson, MD Award for Outstanding Patient Care by a Resident was awarded to Michael Saheb Kashaf, MD, MSc by Residency Director **Jeffrey E. Lee, MD**. Dr. Ericson was an outstanding former resident in the department who passed away in 2007 at a young age. The department is grateful that Dr. Ericson's family has supported his memory in this special way.

The Lanna Cheng Ophthalmology Innovation Award in recognition of outstanding Innovation in Research in Retina, was given to Daniel Vail, MD.

The Lanna Cheng Ophthalmology Innovation Award in recognition of outstanding Innovation in Research in Ophthalmic Reconstructive and Oculofacial Plastic Surgery, was given to Rolika Bansal, MD.

The Whitehill Prize for Excellence from the UC San Diego Health Sciences Academy of Clinical Scholars was given to **Nathan L. Scott, MD, MPP**. The recipient is chosen by the Chief Residents and given to an Assistant or Associate level faculty member who best exemplifies compassionate bedside manner for learners to emulate, serves as an advocate for trainees, and encourages and facilitates clinical, translation or basic science research projects.

UC San Diego Honors Shoji with 2025 Teaching Award

Oculoplastics fellow, Marissa K. Shoji, MD, is the 2025 recipient of the UC San Diego School of Medicine Resident and Fellow Teaching Award. This award recognizes one trainee who displays excellence in teaching through engaging learners and fostering an environment that promotes intellectual curiosity and inquiry. Shoji is described as someone who "... consistently went above and beyond to create inclusive, supportive and hands-on learning environments in the clinic, operating room or through extracurricular teaching sessions — all while managing her own busy clinical responsibilities, including being on call nearly every week."

Award for Outstanding Teaching – Surgical
Christopher Heichel, MD

Award for Outstanding Teaching - Clinical
Henry Ferreyra, MD

Certificate of Appreciation
Doran B. Spencer, MD, PhD

Award for Outstanding Didactic Teaching - Faculty
David B. Granet, MD

Award for Outstanding Clinical Teaching - Resident
Jimmy S. Chen, MD

Award for Academic Excellence
Elizabeth Flores

Award for Outstanding OKAP Teaching
Marissa K. Shoji, MD

Award for Outstanding Didactic Teaching – Faculty
David B. Granet, MD

Outstanding Academic Achievement Awards OKAP
Jimmy S. Chen, MD & Alison Chan, MD

Award for Fellow Appreciation
Marissa K. Shoji, MD

Education: Physicians

Grand Rounds

Shiley Eye Institute (SEI) faculty, ophthalmology trainees, medical students, and staff as well as SEI alumni and community ophthalmologists and optometrists are invited to the departmental weekly Grand Rounds on Monday evenings in person and via Zoom. The Grand Rounds consist of a featured lecture from a prominent physician scientist and case presentations with moderated discussion. Interesting eye diseases, treatment dilemmas, and surgical challenges are often the theme. Monthly guest lecturers attend and present the Grand Rounds throughout the year.

September 16, 2024
Hosted: Robert N. Weinreb, MD
Case Presenter 1: Rebecca Lian, MD
Title: “Sellar SurprEYES!”
Moderated by: Peter J. Savino, MD
Case Presenter 2: Skenda Jean-Charles, MD
Title: “Fungus Among Us”
Moderated by: Don O. Kikkawa, MD

September 23, 2024
Hosted: Robert N. Weinreb, MD
Case Presenter 1: Michael Saheb Kashaf, MD, MSc
Title: “Field Day”
Moderated by: Robert N. Weinreb, MD
Case Presenter 2: Jimmy S. Chen, MD
Title: “A Diagnostic Headache”
Moderated by: Lingling Huang, MD

September 30, 2024
Hosted: Robert N. Weinreb, MD
Case Presenter 1: Justin Ma, MD
Title: “Flower Power”
Moderated by: David B. Granet, MD; Shira L. Robbins, MD
Case Presenter 2: Alison Chan, MD
Title: “If At First You Don’t Succeed, Dry, Dry Again”
Moderated by: Natalie A. Afshari, MD; Doran B. Spencer, MD, PhD

October 28, 2024
Hosted: Robert N. Weinreb, MD
Case Presenter 1: Daniel Vail, MD
Title: “Treatment Considerations in Geographic Atrophy After Anti-VEGF Injections”
Moderated by: William R. Freeman, MD
Guest Lecturer: Dan Schwartz, MD, Professor Emeritus at UCSF, Director of the Retina Service at the San Francisco VAMC
Title: “Innovating Across the Spectrum: Device, Diagnostic, and Pharma”

November 4, 2024
Hosted: Robert N. Weinreb, MD
Case Presenter 1: Marissa K. Shoji, MD
Title: “A Tumor Tale”
Moderated by: Don O. Kikkawa, MD
Case Presenter 2: Elaine Tran, MD
Title: “It's Pit Stop Time”
Moderated by: Robert N. Weinreb, MD

November 18, 2024
Hosted: Robert N. Weinreb, MD
Case Presenter 1: Skenda Jean-Charles, MD
Title: “Doing a Double Take”
Moderated by: Shira L. Robbins, MD
Case Presenter 2: Jessica Hsueh, MD
Title: “The Gift That Keeps on Giving”
Moderated by: Natalie A. Afshari, MD

January 6, 2025
Hosted: Robert N. Weinreb, MD
Case Presenter 1: Skenda Jean-Charles, MD
Title: “Eyes in "Denial"”
Moderated by: Doran B. Spencer, MD, PhD
Case Presenter 2: Malvika Arya, MD, PhD
Title: “Retina Grand Rounds”
Moderated by: William R. Freeman, MD

January 13, 2025
Hosted: Natalie A. Afshari, MD
Case Presenter 1: Alex Svoronos, MD, PhD
Title: “Whack-a-mole with Cancer”
Moderated by: Nathan L. Scott, MD, MPP
Guest Lecturer: Pedram Hamrah, MD, Professor and Vice Chair of Research and Academic Programs; Director, Center for Translational Ocular Immunology; New England Eye Center, Tufts Medical Center; Professor, Departments of Ophthalmology, Immunology, Neuroscience, and Bioengineering; Tufts University School of Medicine; Boston, Massachusetts
Title: “New Insights into Pathophysiology, Diagnosis and Management or Neuropathic Corneal Pain”

January 27, 2025
Hosted: Robert N. Weinreb, MD
Case Presenter 1: Michael Saheb Kashaf, MD, MSc
Title: “Put it on the TAB”
Moderated by: Peter Savino, MD
Guest Lecturer: Michael S. Lee, MD, Professor; Department of Ophthalmology and Visual Neurosciences, Neurology, and Neurosurgery; Mackall-Scheie Endowed Chair; Director of Neuro-Ophthalmology; Co-Director of the Center for Thyroid Eye Disease; University of Minnesota
Title: “Get the Skinny on IIH”

February 10, 2025
Hosted: Robert N. Weinreb, MD
Case Presenter 1: Jimmy S. Chen, MD
Title: “The Swell that Keeps on Giving”
Moderated by: Shyamanga Borooah, MD
Case Presenter 2: Zacharia Nayer, MD
Title: “Blurred lines: Glaucoma or Not Glaucoma”
Moderated by: Robert N. Weinreb, MD

February 24, 2025
Hosted: Robert N. Weinreb, MD
Case Presenter 1: Alison Chan, MD
Title: “Mass Confusion”
Moderated by: Don O. Kikkawa, MD
Case Presenter 2: Elaine Tran, MD
Title: “Eyes and Ears: The Elephant in the Rheum”
Moderated by: Lingling Huang, MD, PhD

April 7, 2025
Hosted: Robert N. Weinreb, MD
Case Presenter 1: Jonathan Peterson, MD, MS
Title: “Scarred for Life?”
Moderated by: Natalie A. Afshari, MD
Guest Lecturer: Matilda F. Chan, MD, PhD, Professor of Ophthalmology, UCSF Department of Ophthalmology, Francis I. Proctor Foundation
Title: “Matrix Metalloproteinases and Corneal Wound Repair: Roles Beyond Remodeling”

April 14, 2025
Hosted: Robert N. Weinreb, MD
Case Presenter 1: Malvika Arya, MD, PhD
Title: Case 1
Moderated by: David B. Granet, MD
Case Presenter 2: Daniel Vail, MD
Title: Case 2
Moderated by: Shira L. Robbins, MD
Guest Lecturer: Thomas Lee, MD, Associates Chair in Ophthalmology, Children’s Hospital Los Angeles, Associate Professor of Clinical Ophthalmology, Keck School of Medicine of USC
Title: “How To See Beyond the Horizon (Use Your Imagination)”

April 21, 2025
Hosted: Robert N. Weinreb, MD
Case Presenter 1: Rebecca Lian, MD
Title: “A Sticky Surgical Situation”
Moderated by: Don O. Kikkawa, MD
Case Presenter 2: Justin Ma, MD
Title: “A New Tool for ouTPAtient Ophthalmology”
Moderated by: Doran B. Spencer, MD, PhD

April 28, 2025
Hosted: Robert N. Weinreb, MD
Case Presenter 1: Briggs Hoyt, MD
Title: “Between a RocK and a Hard Lens: Navigating Surgical Pitfalls in Complex Cataract and Glaucoma”
Moderated by: Robert N. Weinreb, MD
Case Presenter 2: Alex Svoronos, MD, PhD
Title: “Oil's Well That Ends Well: A Retinal Rescue in Sturge Weber Syndrome”
Moderated by: Michael H. Goldbaum, MD

Education: Physicians

Vision Research Lectures

The Vision Research Lecture Series addresses the latest advances in vision science and clinical ophthalmology. Each presentation features UC San Diego Department of Ophthalmology's faculty, as well as a selection of leading vision scientists from around the globe.

July 24, 2024
Hosted by: Robert N. Weinreb, MD
Guest Lecturer: Vivien Coulson-Thomas, PhD
Title: "Hyaluronan Regulates Homeostasis and Pathogenesis of the Ocular Surface"

August 1, 2024
Hosted by: Robert N. Weinreb, MD
Guest Lecturer: Daniel Balikov, MD, PhD
Title: "In a Materials State of Mind: Engineering Cell-Matrix Interfaces"

September 5, 2024
Hosted by: Robert N. Weinreb, MD
Guest Lecturer: Kimberly Alonge, PhD
Title: "Perineuronal Nets in Health and Disease"

October 24, 2024
Hosted by: Robert N. Weinreb, MD
Guest Lecturer: Sidney Gospe III, MD, PhD
Title: "Therapeutic Approaches in a Preclinical Mouse Model of Mitochondrial Optic Neuropathy"

October 30, 2024
Hosted by: Robert N. Weinreb, MD
Guest Lecturer: Nazlee Zebardast, MD
Title: "Precision Medicine in Glaucoma Care"

December 5, 2024
Hosted by: Robert N. Weinreb, MD
Guest Lecturer: Jacob Heng, MD, PhD
Title: "A Molecular Approach Towards Retinal Vascular Diseases"

January 13, 2025
Guest Lecturer: Pedram Hamrah, MD
Title: "New Insights into Pathophysiology, Diagnosis and Management or Neuropathic Corneal Pain"

April 10, 2025
Hosted by: Robert N. Weinreb, MD
Guest Lecturer: Dong Feng Chen, MD, PhD, FARVO
Title: "From Neuroprotection to Regeneration: Strategies in Glaucoma Therapy and Vision Restoration"

The SEI Division of Oculofacial Plastic and Reconstructive Surgery hosted an Oculofacial Course in La Jolla, California, February 27 – March 1, 2025. Course directors were SEI faculty **Don O. Kikkawa, MD**, **Bobby S. Korn, MD, PhD** and **Catherine Y. Liu, MD, PhD**. The next Oculofacial Course will be held in La Jolla February 26-28, 2026.

Education: Patients

2025 Glaucoma Update

Since 1983, **Robert N. Weinreb, MD**, has hosted the annual "Glaucoma Update" each October, showcasing the latest innovations and advancements in glaucoma research for patients. The 2025 event was held on October 8 at the Viterbi Family Vision Research Center, where Dr. Weinreb was joined by SEI faculty speakers **Christopher Girkin, MD, MSPH, Sally L. Baxter, MD, MSc**, and **Derek S. Welsbie, MD, PhD**, along with special guest Barbara Jung, MD, Associate Vice Chancellor and Dean of the UC San Diego School of Medicine.

Summer Student Research Symposium

The Shiley Eye Institute (SEI) and the Viterbi Family Department of Ophthalmology sponsored a UC San Diego student symposium on July 28, 2025, to showcase research from students attending universities across the country in our National Eye Institute (NEI) funded T35 Short-Term Research in Vision & Eye Health (STRIVE) Program, as well as UC San Diego medical students applying for ophthalmology residency and a UC San Diego Medical School alumnus. The SEI STRIVE program, led by SEI faculty members **Sally L. Baxter, MD, MSc**, and **Linda M. Zangwill, PhD**, provides students with the opportunity to engage in innovative vision research under the mentorship of several SEI faculty members. The Summer Student Research Symposium underscores SEI's commitment to advancing the field through both education and research.

UC San Diego Medical Student Speakers:

Shahin Hallaj, MD
Project Title: "Association Between Glucagon-Like Peptide-1 Receptor Agonists Exposure and Intraocular Pressure Change"
Faculty Mentor: Sally L. Baxter, MD, MSc

Taiki Nishihara
Project Title: "Association Between Corneal Dystrophy and Mental Health Conditions: A Propensity Score–Matched Analysis Using the All of Us Research Program"
Faculty Mentor: Sally L. Baxter, MD, MSc

UC San Diego Medical Student Alumnus

Benton Chuter, MD
University of Tennessee Health Science Center
Project Title: "Automated Segmentation and Classification of Healthy and Necrotic Optic Nerve Axons Using Deep Learning"
Faculty Mentors: Linda M. Zangwill, PhD and Sally L. Baxter, MD, MSc

STRIVE Students Speakers:

Riya Mittal
Boston University Chobanian and Avedisian School of Medicine
Project Title: "Associations Between Smoking Intensity and Glaucoma"
Faculty Mentor: Sasan Moghimi, MD

Naren Ramesh
UC San Diego
Project Title: "Associations Between Satellite-Based Ambient Ultraviolet Radiation and Uveal Melanoma Incidence in the MarketScan® Commercial Claims Database"
Faculty Mentor: Nathan L. Scott, MD, MPP

Tori Sayers
University of Texas Rio Grande Valley School of Medicine
Project Title: "Spatial Proteomic Analysis of Early Dry AMD"
Faculty Mentor: Christopher B. Toomey, MD, PhD

Christina Tran
Tufts University
Project Title: "Comparative Evaluation of Exosome Isolation Methods from Human Tear Fluid"
Faculty Mentor: Natalie A. Afshari, MD

(Pictured left to right):

Tori Sayers, Christopher B. Toomey, MD, PhD and Toomey Lab Group Summer Student Research Members

SEI Residency Boot Camp Welcomes Class of 2028

The Shiley Eye Institute (SEI) and Viterbi Family Department of Ophthalmology's Residency Program Director, **Jeffrey E. Lee, MD**, and Residency and Fellowship Program Manager Robyn Austin, hosted a two-week "boot camp" for the SEI residency Class of 2028 from July 1 to July 11, 2025.

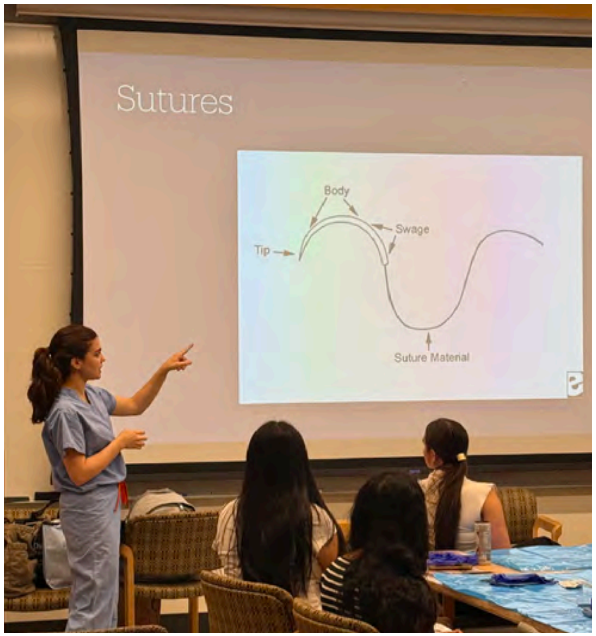
In addition to the Class of 2028, in attendance for some of the sessions were SEI National Eye Institute-funded T35 Short-Term Research in Vision & Eye Health (STRIVE) Program medical students, as well as members of the residency Class of 2029.

Boot camp residents had the opportunity to connect with one another, as well as get to know current senior residents, incoming fellows, SEI faculty and staff, as well as San Diego collaborating doctors from the Navy and VA through lectures, tours and workshops.

A few session topics included residency program expectations, suturing, cornea emergencies, interpretation of glaucoma imaging, pediatric ophthalmology, examination with ultrasound and examination of the retina, contact lenses and low vision patients, basics of biomicroscopy, neuro-ophthalmic examinations, oculoplastic emergencies, clinical trials, the EyeMobile program, and more.

Most sessions took place in the SEI education center, but attendees also had the opportunity to tour the La Jolla SEI complex including operating room facilities and clinic. They also visited the San Diego Navy Base and San Diego VA hospital, where residents will receive training from SEI faculty.

"The bootcamp is invaluable to learning the basics of ophthalmology and the ins and outs of Shiley in order to hit the ground running from day one. It was wonderful meeting the amazing faculty, co-residents, fellows, and exceptional staff who we will be interacting with every day. Not to mention, you to get time to bond with your class even more after your intern year at Scripps Mercy," said Class of 2028 resident, Margaret Havunjian, MD, MPH.



(Previous page):

2028 Residents Christie Campla, MD, PhD, Margaret Havunjian, MD, MPH, Timothy Kim, MD, and Anna Mueller, MD with Robyn Austin

(Pictured left to right, top to bottom):

Oculofacial International Fellow Suture Course by Nahia Dib El Jalbout, MD

Lecture by Capt. Scott K. McClatchey, MC, USN

Residents Operating Room Surgery Suite Tour with Tony V. Ly, CST

Grants

Division	Faculty	Title	Project Period	Funding Agency
Glaucoma	Sally L. Baxter, MD, MSc	AIM-AHEAD Bridge2AI AI-READI	10/01/2024-07/31/2025	University of North Texas Health Science; NIH Prime
Glaucoma	Sally L. Baxter, MD, MSc	FREEMIND: Focused Research Education and Experience Using Multimodal and Interdisciplinary NIH Dataset	03/11/2025-12/31/2027	NIH/Office of the Director
Glaucoma	Sally L. Baxter, MD, MSc	Multi-modal Health Information Technology Innovations for Precision Management of Glaucoma	09/10/2020-08/31/2025	NIH/NEI
Glaucoma	Sally L. Baxter, MD, MSc	OT2 Bridge to Artificial Intelligence (Bridge2AI) Program - Skills Development	09/01/2022-08/31/2027	University of Washington; NIH/NEI
Glaucoma	Sally L. Baxter, MD, MSc	PAGE-G: Precision Approach Combining Genes and Environment in Glaucoma	09/30/2023-08/31/2025	NIH/NEI
Glaucoma	Sally L. Baxter, MD, MSc	Short-Term Research Training in Vision and Eye Health (STRIVE)	05/01/2022-03/31/2027	NIH/NEI
Glaucoma	Sally L. Baxter, MD, MSc	Todos Juntos: All of Us	03/01/2025-08/31/2025	Healthy Americas Foundation
Glaucoma	Mark Christopher, PhD	AI-Based Identification of Rapid Glaucoma Progression to Guide Clinical management and Accelerate Clinical Trials	04/01/2023-03/31/2026	NIH/NEI
Glaucoma	Mark Christopher, PhD	Deep Learning Approaches to Detect Glaucoma and Predict Progression from Spectral Domain Optical Coherence Tomography	04/01/2023 - 03/31/2026	NIH/NEI
Glaucoma	Christopher Girkin, MD	Implementing AI-based Glaucoma Screening within Federally Qualified Health Centers	09/30/2024-/9/29/2025	The University of Alabama at Birmingham
Glaucoma	Christopher Girkin, MD	The Impact of Age-Related Vitreous Degeneration and Vitreous Replacement on Scleral Biomechanics: A Novel Mechanism and Treatment Target for Glaucoma	10/01/2024-05/31/2025	The University of Alabama at Birmingham
Glaucoma	Christopher Girkin, MD	The Mechanotranscriptome of the Optic Nerve Head Following Acute Experimental Ocular Hypertension in Living Human Eyes	06/01/2023-05/31/2028	NIH/NEI
Glaucoma	Alex A. Huang, MD, PhD	Dynamic Variable Aqueous Humor Outflow and Glaucoma Therapies in the Human Eye	05/01/2020-04/30/2025	NIH/NEI
Glaucoma	Alex A. Huang, MD, PhD	Exercise Countermeasure to Prevent Ocular Structural and Functional Changes in a Terrestrial Model of SANS	08/22/2022-08/21/2025	NASA
Glaucoma	Alex A. Huang, MD, PhD	iSAFE (Investigating Structure and Function of the Eye)	08/26/2022-09/30/2035	NASA
Glaucoma	Alex A. Huang, MD, PhD	Leveraging the Conjunctiva for Improved Glaucoma Treatments	01/01/2024-12/31/2025	Research to Prevent Blindness
Glaucoma	Alex A. Huang, MD, PhD	Novel Ocular Imaging and Molecular Analysis of Anterior Eye Segment for Glaucoma	03/01/2023-02/29/2028	Northwestern University; NIH/NEI as Prime
Glaucoma	Alex A. Huang, MD, PhD	The Role of Glycosaminoglycans in Segmental Aqueous Humor Outflow and Glaucoma	04/01/2025-03/31/2026	American Glaucoma Society
Glaucoma	Wonkyu Ju, PhD	Aibp-Mediated Neuroprotection in Glaucomatous Optic Neuropathy	09/30/2023-05/31/2027	NIH/NEI
Glaucoma	Wonkyu Ju, PhD	Cxcr3 Mediated Cell Cell Communication During Glaucoma	09/01/2022-07/31/2027	NIH/NEI

Division	Faculty	Title	Project Period	Funding Agency
Glaucoma	Wonkyu Ju, PhD	Development of AAV-AIBP for Neuroprotection in Glaucoma	08/15/2023-07/31/2025	NIH/NINDS
Glaucoma	Wonkyu Ju, PhD	Neuroprotective Role of Sirt6 in Glaucoma	06/01/2020-05/31/2025	NIH/NEI
Glaucoma	Wonkyu Ju, PhD	Reversing Microglial Inflammarafts and Mitochondrial Dysfunction in Alzheimer's	12/01/2022-11/31/2027	NIH/NIA
Glaucoma	Sasan Moghimi, MD	Impact of Smoking Cessation in Tobacco-Related Ocular Neurodegenerative Deseases Using Big Data	07/01/2024-06/30/2027	UCOP
Glaucoma	Sasan Moghimi, MD	Monitoring of Glaucoma Patients in Advanced Disease	09/01/2022-08/31/2027	NIH/NEI
Glaucoma	Robert N. Weinreb, MD	Diagnosis and Monitoring of Glaucoma with Optical Coherence Tomography angiography	05/01/2018-04/30/2026	NIH/NEI
Glaucoma	Robert N. Weinreb, MD	iGLAMOUR Study: Innovations in Glaucoma Adherence and Monitoring Of Under-Represented Minorities	01/15/2021-12/31/2025	NIH/NEI
Glaucoma	Robert N. Weinreb, MD	Ophthalmology and Visual Sciences Career Development K12 Program	04/01/2015-07/31/2026	NIH/NEI
Glaucoma	Robert N. Weinreb, MD	Unrestricted and Challenge Grant - Research to Prevent Blindness	01/01/2023-12/31/2027	Research to Prevent Blindness
Glaucoma	Derek S. Welsbie, MD, PhD	Development of Small Molecule and Gene Therapy Approaches to Inhibit Dual Leucine Zipper Kinase and Accessory Pathways for Retinal Ganglion Cell Neuroprotection	08/01/2020-07/31/2024	Perceive Biotherapeutics
Glaucoma	Derek S. Welsbie, MD, PhD	High-Throughput Functional Genomic Screening in Retinal Ganglion Cells	02/01/2019-01/31/2025	Glaucoma Research Foundation
Glaucoma	Derek S. Welsbie, MD, PhD	Kinase Multitargeting for Glaucoma Neuroprotection	01/01/2024-12/31/2028	NIH/NEI
Glaucoma	Derek S. Welsbie, MD, PhD & Christopher Girkin, MD	Viability, Imaging, Surgical, Immunomodulation, Ocular Preservation and Neuroregeneration (VISION) Strategies for Whole Eye Transplant	11/01/2024-10/31/2025	Stanford University
Glaucoma	Linda M. Zangwill, PhD	A Randomized Clinical Trial Evaluating Fenofibrate for Prevention of Diabetic Retinopathy Worsening	10/01/2021-09/30/2026	NIH/DRCR
Glaucoma	Linda M. Zangwill, PhD	Diagnostic Innovations in Glaucoma Study (DIGS): High Myopia and Advanced Diseases	09/01/2022-08/31/2027	NIH/NEI
Glaucoma	Linda M. Zangwill, PhD	Forecasting Disease Progression Using Artificial Intelligence	01/01/2022-12/31/2024	Glaucoma Research Foundation
Glaucoma	Linda M. Zangwill, PhD	AI-Based Identification of Rapid Glaucoma Progression to Guide Clinical Management and Accelerate Clinical Trials	09/30/2022-09/29/2024	NIH/NEI
Glaucoma	Linda M. Zangwill, PhD	Multimodal Artificial Intelligence to Predict Glaucomatous Progression and Surgical Intervention	09/01/2022-08/31/2026	NIH/NEI
Glaucoma	Linda M. Zangwill, PhD	OT2 Bridge to Artificial Intelligence (Bridge2AI) Program - Data Generation	09/01/2022-08/31/2027	NIH/NEI
Glaucoma	Linda M. Zangwill, PhD	Translational Vision Research Training at UCSD	04/01/2016-06/30/2026	NIH/NEI
Glaucoma	Linda M. Zangwill, PhD	P30 NEI Center Core Grant for Vision Research	09/01/2023-04/30/2028	NIH/NEI
Oculoplastics	Sarah Cheng, MD	Developmental Map of Thyroid Eye Disease at the Single Nuclei Level- and the Impact of IGF-1R Inhibition	09/16/2024-09/15/2027	Amgen, Inc.

Division	Faculty	Title	Project Period	Funding Agency
Oculoplastics	Sarah Cheng, MD	Regulation of IGF-1R in Acute and Chronic Thyroid Eye Disease	08/01/2024-07/31/2026	NIH/NEI
Oculoplastics	Catherine Y. Liu, MD, PhD	Genetic Susceptibility for Thyroid Eye Disease: Evaluation of the Insulin-Like Growth Factor-1 Receptor Pathway	02/21/2024-02/28/2025	UC San Diego Academic Senate
Pediatrics	Iliana Molina, MS	City Heights Partnership Price Foundation and UCSD Eyemobile for Children	01/01/2022-12/31/2025	Price Foundation
Pediatrics	Jolene Rudell, MD, PhD	Influence of the Orbit on Extraocular Muscles in a Genetic Model of Strabismus	05/15/2024-11/30/2025	UCSD Academic Senate
Pediatrics	Jolene Rudell, MD, PhD	Role of a Craniosynostosis Associated Fibroblast Growth Factor Receptor Mutation in Extraocular Muscles	06/01/2023-05/31/2028	NIH/NEI
Pediatrics	Jolene Rudell, MD, PhD	Role of Fibroblast Growth Factor Signaling in a Genetic Model of Strabismus	12/01/2022-11/30/2025	Strabismus Research Foundation
Retina	Radha Ayyagari, PhD	Expert Curation of Clinically Significant Variants in Genes for Early Onset Retinal Degeneration	07/01/2022-05/31/2025	UCSF; NIH/NEI as Prime
Retina	Radha Ayyagari, PhD	Molecular Mechanism Underlying Late-Onset Retinal/Macular Degeneration	09/01/2020-06/30/2025	NIH/NEI
Retina	Radha Ayyagari, PhD	Unraveling the Molecular Pathology of Retinal Degeneration Through Single Cell Genomics	06/01/2021-05/31/2026	NIH/NEI
Retina	Napoleone Ferrera, MD	Long Novel-Acting Inhibitors of Vascular Endothelial Growth Factor (VEGF) for Treatment of Intraocular Vascular Disorders; Co-I: Eric Nudleman, MD, PhD	04/01/2020-03/31/2025	NIH/NEI
Retina	Napoleone Ferrera, MD	Long Novel-Acting Inhibitors of Vascular Endothelial Growth Factor (VEGF) for Treatment of Intraocular Vascular Disorders; Co-I: Eric Nudleman, MD, PhD	04/01/2020-03/31/2025	NIH/NEI
Retina	William R. Freeman, MD	Intracellular RNA Nanoparticle Therapeutics to Treat Retinal Neovascularization	09/01/2023-05/31/2027	NIH/NEI
Retina	William R. Freeman, MD	Intracellular RNA Nanoparticle Therapeutics to Treat Retinal Neovascularization	09/01/2023-05/31/2027	NIH/NEI
Retina	William R. Freeman, MD	Intracellular RNA Nanoparticle Therapeutics to Treat Retinal Neovascularization	09/01/2023-05/31/2027	NIH/NEI
Retina	William R. Freeman, MD [CO-PI]	SCH: Multimodal Retina Image Alignment and Applications	09/01/2021-08/31/2025	NIH/NEI
Retina	Eric B. Nudleman, MD, PhD	A Clonal Ndp-knockout Mouse Model for Understanding Coats' disease Pathogenesis and Testing Therapeutic Strategies	02/18/2025-02/28/2026	UC San Diego Academic Senate
Retina	Eric B. Nudleman, MD, PhD	RPB Stein Innovation Award	01/01/2022-12/31/2024	Research to Prevent Blindness
Retina	Nathan L. Scott, MD, MPP	(NEO)Adjuvant IDE196 (Darovasertib) in Patients with localized Ocular Melanoma	10/16/2024-01/15/2027	Bristol-Myers Squibb Foundation, Inc. (WINN)
Retina	Christopher B. Toomey, MD, PhD	Characterization and Binding Properties of Lipoprotein Particles in Bruchs	06/03/2024-06/02/2025	Alcon Research LLC
Retina	Christopher B. Toomey, MD, PhD	Heparan Sulfate and Lipoprotein Interactions in Bruch's Membrane in the Early Stages of AMD	08/01/2024-07/31/2029	Foundation Fighting Blindness
Retina	Christopher B. Toomey, MD, PhD	Robert Machemer MD and International Retinal Research Foundation Fellowship	10/01/2022-09/31/2024	Robert Machemer Foundation

Division	Faculty	Title	Project Period	Funding Agency
Retina	Christopher B. Toomey, MD, PhD	Role of Bruch Membrane Heparan Sulfate in Drusenogenesis in Age-Related Macular Degeneration	07/01/2024-06/30/2029	NIH/NEI
Retina	Christopher B. Toomey, MD, PhD	Role of High-Density Lipoprotein Particles in Early Age-Related Macular Degeneration	07/01/2024-06/30/2027	Larry L. Hillblom Foundation
Retina	Christopher B. Toomey, MD, PhD	RPB Career Development Award	07/01/2023-12/31/2027	Research to Prevent Blindness
Retina	Christopher B. Toomey, MD, PhD	The Role of Glycosaminoglycans in Segmental Aqueous Humor Outflow in Glaucoma	02/18/2025-02/28/2026	UC San Diego Academic Senate
Stem Cell	Karl Wahlin, PhD	Correlating Genomic AMD Risk Variants with Lipid Composition and Phagocytic Function of Patient-Derived Induced Pluripotent Stem Cell (iPSC)-derived Retinal Pigment Epithelium (RPE)	09/30/2022-08/31/2025	UC Irvine; NIH/NEI as Prime
Stem Cell	Karl Wahlin, PhD	Endogenous Generation of Cone Photoreceptors to Increase Light Responses in Foveal Hypoplasia	07/01/2020-06/30/2026	Vision of Children
Stem Cell	Karl Wahlin, PhD	Endogenous Repair in a Human 3D Retinal Organoid Model of Leber Congenital Amaurosi	07/01/2022-06/30/2025	The Foundation Fighting Blindness
Stem Cell	Karl Wahlin, PhD	Morphogenetic Signaling from the Cell Surface to the Nucleus During Vertebrate Eye Development	07/01/2024-06/30/2025	University of Utah; NIH/NEI as Prime
Stem Cell	Karl Wahlin, PhD	Pluripotent Stem Cell Derived 3D Retinas for Studies of Early Onset Retinal Degeneration.	04/01/2020-03/31/2025	NIH/NEI

Postdoctoral Fellow Awarded BrightFocus Research Grant

Postdoctoral Fellow Awarded BrightFocus Research Grant Jaesoo Jung, PhD, in the lab of **Christopher Toomey, MD, PhD**, was awarded the prestigious BrightFocus Macular Degeneration Research Award for the fiscal years of 2025-2027. The grant will support his fellowship research on the role of high-temperature requirement protein A1 (HTRA1) in age-related macular degeneration.

Clinical Trials

Division	Principal Investigator	Title	Project Period	Funding Agency
Cornea	Christopher Heichel, MD	A Thirteen-year Study of the Indications and Visual Outcomes of Capsular Tension Ring Implantation in Cataract Surgery 2016	07/01/2016-06/30/2029	
Glaucoma	Andrew Camp, MD, PhD	An Extension Trial to Evaluate the Long-term Safety and Efficacy of Bimatoprost SR in Patients with open Angle Glaucoma or Ocular Hypertension	09/08/2017-01/23/2024	Allergan
Glaucoma	Andrew Camp, MD, PhD	An Extension Trial to Evaluate the Long-term Safety and Efficacy of Bimatoprost SR in Patients with Open Angel Glaucoma or Ocular Hypertension	04/16/2020-04/15/2030	Allergan Inc.
Glaucoma	Robert N. Weinreb, MD	An Age-Stratified Data Collection Study in American Adult Males and Females Ages 18 to Above to Establish a Normative Database Using the 3D Optical Coherence Tomography 3D	05/27/2009-12/31/2032	TOPCON
Glaucoma	Robert N. Weinreb, MD	Evaluate Clinical Big Data Provided by Topcon and Derived from OCT Devices	07/01/2022-06/30/2026	TOPCON
Glaucoma	Robert N. Weinreb, MD	Comparative Study of the Nidek Optical Coherence Tomography RS-3000 and RTVVVue OCT Predicate Device for the Measurements of Retinal and RNFL Thickness	03/31/2011-12/31/2032	Nidek Co. Ltd.
Glaucoma	Robert N. Weinreb, MD	Nedek Advanced OCT/SLO Systems RS-3000 Nomative Data Collection Study	05/16/2012-12/31/2032	Nidek Co. Ltd.
Oculoplastics	Don O. Kikkawa, MD	A Phase 2b, Randomized, Double-masked, Placebo-Controlled, Study to Evaluate the Safety, Pharmacokinetics and Efficacy of Linsitinib in Subjects with Active, Moderate to Severe Thyroid Eye Disease (TED)	11/23/2023-11/22/2033	Syneos Health, Inc.
Oculoplastics	Catherine Y. Liu, MD, PhD	A Phase 2, Proof-of-Concept, Randomized, Double-Masked, Placebo-Controlled Study to Determine the Efficacy and Safety of LASN01 in Patients with Thyroid Eye Disease	01/08/2024-01/07/2034	Lassen Therapeutics 1, Inc.
Oculoplastics	Catherine Y. Liu, MD, PhD	A Phase 3, Randomized, Double-masked, Placebo-controlled, Parallel-group, Multicenter Trial to Evaluate the Efficacy, Safety and Tolerability of Subcutaneous Teprotumumab in Participants with Moderate	09/10/2024-09/09/2034	PPD Investigator Services, LLC
Oculoplastics	Catherine Y. Liu, MD, PhD	A Phase 4, Randomized, Double-masked, Placebo-controlled, Multicenter Trial to Evaluate the Efficacy and Safety of TEPEZZA in Treating Patients with Chronic (Inactive) Thyroid Eye Disease	03/23/2021-03/22/2031	Horizon Therapeutics USA, Inc.
Oculoplastics	Catherine Y. Liu, MD, PhD	A Phase Iii, Randomized, Double-Masked, Placebo-Controlled, Multicenter Study To Evaluate The Efficacy, Safety, Pharmacokinetics, And Pharmacodynamics Of Satralizumab In Participants With Moderate-To-Severe Thyroid Eye Disease	11/01/2024-10/31/2034	Genentech, Inc.
Pediatrics	Shira L. Robbins, MD	A Multi-Center, Double-Masked, Randomized, Placebo-Controlled Phase 3 Study of the Safety and Efficacy of Atropine 0.1% and 0.01% Ophthalmic Solutions Administered with a Microdose Dispenser for the reduction of Pediatric Myopia Progression [CHAPERONE]	04/01/2020-12/31/2025	Eyenovia, Inc.
Retina	Shyamanga Borooah, MD,PhD	A Phase 1/2 Study To Assess The Safety And Efficacy Of Ocu400 For Retinitis Pigmentosa Associated With Nr2e3 And Rho Mutations	10/18/2022-10/18/2032	Ocugen, Inc.
Retina	Shyamanga Borooah, MD,PhD	A Phase 3, Multi-Center, Randomized Study To Assess The Efficacy, Safety And Tolerability Of Subretinal Ocu400 Gene Therapy For The Treatment Of Retinitis Pigmentosa	02/26/2025-02/25/2035	Ocugen, Inc.

Division	Principal Investigator	Title	Project Period	Funding Agency
Retina	Shyamanga Borooah, MD,PhD	A Phase 1b Open-label Study to Evaluate the Pharmacokinetics, Pharmacodynamics, Safety, and Tolerability of Tinlarebant in Japanese Subjects with Stargardt Disease and a Phase 2/3 Randomized, Double-masked, and Placebo-controlled Study to Evaluate the Safety, Tolerability, and Efficacy of Tinlarebant in Subjects with Stargardt Disease	12/12/2024-12/11/2034	BELITE BIO, LLC
Retina	Shyamanga Borooah, MD,PhD	A Phase 2 Randomized Placebo-Controlled Double-Masked Study to Assess Safety & Efficacy of Multiple Doses of IONIS-FB-LRX an Antisense Inhibitor of Complement FactorB in Patients w/GA 2nd to AMD	12/17/2019-12/31/2032	Ionis Pharmaceuticals, Inc.
Retina	Shyamanga Borooah, MD,PhD	A Randomized, Masked, Sham-Controlled Phase 2 Trial of the Safety of a Single Intravitreal Injection of Jcell (Famzeretcel) for the Treatment of Retinitis Pigmentosa (Rp)	05/21/2025-05/31/2035	JCYTE, INC.
Retina	Shyamanga Borooah, MD,PhD	Open-Label, Single Ascending Dose Study to Evaluate the Safety, Tolerability, and Efficacy of EDIT-101 in Adult and Pediatric Participants with Leber Congenital Amaurosis Type 10 (LCA10), with Centrosomal Protein 290 (CEP290)-Related Retinal Degeneration Caused by a Compound Heterozygous or Homozygous Mutation Involving c.2991+1655A>G in Intron 26 (IVS26) of the CEP290 Gene ("LCA10-IVS26")	01/21/2021-01/20/2026	Editas Medicine, Inc.
Retina	Shyamanga Borooah, MD,PhD	An Observational Study in Subjects to Follow the Progression of Stargardt Disease Type 1 (STGD1) Caused by Bi-Allelic Autosomal Recessive Mutations in the ATP Binding Cassette Subfamily A Member 4 (ABCA4) Gene (POLARIS)	08/29/2024-08/28/2034	MEDPACE CLINICAL RESEARCH LLC
Retina	Shyamanga Borooah, MD,PhD	Natural History Study of Patients with X-linked Retinal Dystrophy Associated with Mutations in Retinitis Pigmentosa GTPase Regulator (RPGR)	03/03/2021-09/20/2025	Meiragtx UK II Limited
Retina	Shyamanga Borooah, MD,PhD	Phase 3 Follow-up Study of AAV5-hRKp.RPGR for the Treatment of X-linked Retinitis Pigmentosa Associated with Variants in the RPGR Gene	08/10/2021-08/09/2031	Meiragtx UK II Limited
Retina	Shyamanga Borooah, MD,PhD	Phase 3 Randomized, Controlled Study of AAV5-hRKp.RPGR for the Treatment of Xlinked Retinitis Pigmentosa Associated with Variants in the RPGR Gene	07/30/2021-07/29/2031	Meiragtx UK II Limited
Retina	Shyamanga Borooah, MD,PhD	Phase 3 Follow-up Study of AAV5-hRKp.RPGR for the Treatment of X-linked Retinitis Pigmentosa Associated with Variants in the RPGR Gene	08/10/2021-08/09/2031	Syneos Health, Inc.
Retina	Shyamanga Borooah, MD,PhD	Phase 3 Randomized, Controlled Study of AAV5-hRKp.RPGR for the Treatment of Xlinked Retinitis Pigmentosa Associated with Variants in the RPGR Gene	07/30/2021-07/29/2031	Syneos Health, Inc.
Retina	William R. Freeman, MD	A Multicenter, Open-Label, Extension Study to evaluate the Long-Term Safety and Tolerability of the Port Delivery System with Ranibizumab in Patients with Neovascular AMD [PORTAL]	02/14/2019-06/30/2024	Genentech, Inc.
Retina	William R. Freeman, MD	A Phase 2, Double-Masked, Placebo-Controlled, Dose Range Finding Study of Danicopan (ALXN2040) in Patients with Geographic Atrophy (GA) Secondary to Age-Related Macular Degeneration (AMD)	05/01/2022-12/31/2023	Alexion Pharma
Retina	William R. Freeman, MD	A Phase 2, Prospective, Randomized, Double-masked, Active Comparator-controlled, Multi-center Study to Investigate the Efficacy and Safety of Repeated Intravitreal Administration of KSI-301 in Subjects with Neovascular (Wet) Age-related Macular Degeneration [DAZZLE]	01/30/2020-06/30/2023	Kodiak Sciences, Inc.
Retina	William R. Freeman, MD	A Phase 2b, Randomized, Double-masked, Multicenter, Dose-ranging, Sham-controlled Clinical Trial to Evaluate Intravitreal JNJ-81201887 (AAVCAGsCD59) Compared to Sham Procedure for the Treatment of Geographic Atrophy (GA) Secondary to Age-related Macular Degeneration [PARASOL]	07/28/2023-12/31/2026	Janssen Research & Development LLC
Retina	William R. Freeman, MD	A Phase 3 Multicenter, Randomized, Double-Masked, Sham-Controlled Clinical Trial to assess the Safety and Efficacy of Intravitreal Administration of ZIMURA™ (Complement C5 Inhibitor) in patients with Geographic Atrophy Seondary to Dry Age-Related Macular Dengeneration [GATHER2]	06/18/2020-12/31/2023	IVERIC Biosciences
Retina	William R. Freeman, MD	A Phase 3, Open-Label, Multicenter, Extension Study to Evaluate the Long-Term Safety and Efficacy of PEGCETACOPLAN in subjects with Geographic Atrophy 2nd to AMD [GALE]	07/01/2021-12/31/2025	Apellis Pharmaceuticals

Division	Principal Investigator	Title	Project Period	Funding Agency
Retina	William R. Freeman, MD	A Prospective, Randomized, Double-masked, Active Comparator-controlled, Multi-center, Two-arm, Phase 3 Study to Evaluate the Efficacy and Safety of Intravitreal KSI-301 Compared with Intravitreal Aflibercept in Participants with Visual Impairment Due to Treatment-naïve Macular Edema Secondary to Retinal Vein Occlusion [BEACON]	03/19/2021-06/30/2022	Kodiak Sciences, Inc.
Retina	William R. Freeman, MD	A Randomized, Double-masked, Phase 3 Study of ABP 938 Efficacy and Safety Compared to Aflibercept (Eylea®) in Subjects with Neovascular Age-related Macular Degeneration	08/10/2020-12/31/2023	AMGEN Pharmaceuticals
Retina	William R. Freeman, MD	An Open-Label Extension Phase 3 Trial to Assess the Safety of Intravitreal Administration of Avacincaptad Pegol (complement C5 Inhibitor) in Patients with Geographic Atrophy who previously completed Phase 3 Study ISEE2008 [ISEE2009]	04/26/2023-12/31/2025	IVERIC Biosciences
Retina	William R. Freeman, MD	Long-term Extension Study for Participants with Geographic Atrophy (GA) Secondary to Age-related Macular Degeneration (AMD) in JNJ-81201887 Parent Clinical Studies [ENGAGE]	03/03/2025-03/02/2034	Janssen Research & Development LLC
Retina	William R. Freeman, MD	PHase 3, Multicenter, RandOmized, Double-masked, PlacEbo-CoNtrolled Study of TInlarebant to EXplore Safety and Efficacy in the Treatment of Geographic Atrophy [PHOENIX]	01/31/2024-01/30/2034	Belite Bio
Retina	William R. Freeman, MD	Randomized, Double-Masked, Active-Controlled, Phase 3 Study of the Efficacy and Safety of High Dose Aflibercept in Patients With Neovascular Age-Related Macular Degeneration [PULSAR]	11/17/2020-12/31/2024	BAYER AG
Retina	Eric B. Nudleman, MD, PhD	An Extension Study to Evaluate the Long-Term Outcomes of Patients Who Received Treatment for Retinopathy of Prematurity in the VGFTE-ROP-1920 Study [BUTTERFLEYE]	04/20/2021-12/31/2026	Regeneron Pharmaceuticals
Retina	Eric B. Nudleman, MD, PhD	A Randomized, Controlled, Multi-Center Study to Assess the Efficacy, Safety, and Tolerability of Intravitreal Aflibercept Compared to Laser Photocoagulation in Patients with Retinopathy of Prematurity [ROP]	05/06/2020-12/31/2022	Regeneron Pharmaceuticals
Retina	Eric B. Nudleman, MD, PhD	A Randomized, Partially Masked, Controlled, Phase 3 Clinical Study to Evaluate the Efficacy and Safety of RGX-314 Gene Therapy in Participants with nAMD [ASCENT]	05/10/2022-12/31/2026	RegenxBio Inc.
Retina	Eric B. Nudleman, MD, PhD	A Randomized, Partially Masked, Controlled, Phase 3 Clinical Study to Evaluate the Efficacy and Safety of RGX-314 Gene Therapy in Participants with nAMD [ASCENT]	05/10/2022-12/31/2026	RegenxBio Inc.
Retina	Eric B. Nudleman, MD, PhD	Testing Collagen Probes and Bispecific VEGF/Ang-2 Suppression	04/01/2022-04/30/2025	F. Hoffmann-La Roche LTD
Retina	Nathan L. Scott, MD, MPP	A Phase 3 randomized, masked, controlled trial to evaluate efficacy and safety of belzupcap sarotalocan (AU-011) treatment compared to sham control in subjects with primary indeterminate lesions or small choroidal melanoma	05/14/2024-05/13/2034	Aura Biosciences, Inc.
Retina	Doran B. Spencer, MD, PhD	A Phase 3 Randomized, Double Masked, Placebo Controlled Study to Investigate the Safety and Efficacy of Oral Brepocitinib in Adults with Active, Non Infectious Intermediate, Posterior, and Panuveitis	09/17/2024-09/16/2034	Tarsier Pharma
Retina	Doran B. Spencer, MD, PhD	A Phase III, Multicenter, Randomized, Double-Masked, Active Comparator-controlled Study to evaluate the Efficacy and Safety of Faricimab in Patients with Neovascular Age-related Macular Degeneration [TENAYA]	06/07/2019-06/30/2023	Genentech, Inc.
Retina	Christopher B. Toomey, MD, PhD	A Natural History Observation and Registry Study of Macular Telangiectasia Type 2 [The Mactel Study]	09/30/2024-12/31/2026	The Lowy Medical Research Institute Limited
Retina	Christopher B. Toomey, MD, PhD	A Phase 2, Double-masked, Randomized, Sham-controlled, Multiple-dose Study of the Efficacy and Safety of Intravitreal KUS121 in the Treatment of Non-Arteritic Central Retinal Artery Occlusion (CRAO) [GION]	06/26/2024-06/30/2035	Kyoto Drug Discovery & Development Co., LTD

Celebrating SEI Staff Leadership and Process Innovation

Shiley Eye Institute Assistant Director of Ophthalmology Services, Juan Arias, MBA, and Operations Manager, Riley Thomas, MBA, were recognized for their winning project, “Optimizing Reimbursement by Streamlining Workflow for Cost Efficiency in Ophthalmology,” at UC San Diego Health’s Improvement Excellence Awards showcase in June 2025. Arias and Thomas presented their ideas to reduce the amount of false insurance claims, ultimately leading to a smoother check-in process for patients and alleviating the workload for prior-authorization staff.

According to Arias and Thomas, “The project delivered over $1 million in direct financial impact, improved organizational efficiency and decreased staff strain. It also aligned with UC San Diego Health’s strategic goals of operational excellence and fiscal responsibility.”

In August 2025, Arias and Thomas presented this project again, this time at UC San Diego Health’s Process Palooza and won first place.

Additionally, Director of Ophthalmology Services, Cathi Lyons, MHA, and her team of fellow UC San Diego Health staff members were recognized for their winning poster, “DES-tined for Success: Coaches are the Secret Sauce!” for presenting at the Improvement Excellence Awards showcase in June 2025. Lyon’s project extensively explains the Daily Engagement System that UC San Diego Health has adopted to achieve “Transformational Healthcare - the collective genius of everybody at UC San Diego Health to provide world-class care for our patients and their families.” The project model utilizes patient feedback to assist staff leaders, like Lyons, in creating programs to support patient needs, clinic requirements and encourage engagement across the UC San Diego Health organization.

(Pictured left to right):

Cathi Lyons, MHA, Juan Arias, MBA, and Riley Choi, MBA

Giving Opportunities

For 33 years, the philanthropic support from generous individuals, foundations and corporations has provided the Shiley Eye Institute (SEI) and the Viterbi Family Department of Ophthalmology with valuable resources for patient care, research, education and community service. As a friend of the Department of Ophthalmology, there are several giving options for those who wish to contribute to our tradition of excellence.

Our Goal: Curing Blindness & Saving Sight

Outright Gifts – Immediate Impact
Your support in the form of cash, check, credit card, marketable securities or wire transfers provides immediate impact to our faculty, research and clinical facility. Donating appreciated assets, such as stocks or real estate, can provide additional tax benefits for you.

If writing a check, please make payable to the "UC San Diego Foundation" and put the *Shiley Eye Institute Fund 1935* in the memo section. The check should be accompanied with a letter stating the focus of your donation and mailed to:

UC San Diego Shiley Eye Institute
9415 Campus Point Drive, MC0946
La Jolla, CA, 92093-0946
(Attention: Karen Anisko Ryan)

Planned/Estate Gifts –
Your Vision for Tomorrow
Please consider a charitable bequest in your estate plan (will or trust), naming SEI as a beneficiary of your retirement plan assets, life insurance policy or Donor Advised Fund (DAF). This contribution will ensure the future work of the Shiley Eye Institute and provide direct support to the Viterbi Family Department of Ophthalmology.

We are happy to assist you, your attorney, accountant, or tax advisor with the specific bequest language for your will, trust, or retirement account beneficiary designation. This can help reduce the tax impact on your heirs or provide assurance that your assets will benefit those you care about.

Tribute Gifts –
Acknowledge Someone Special
Contributions can be made in memory, honor or in celebration of a loved one or to mark a special occasion. Consider honoring a particular physician who played a significant role in your eye health.

Matching Gifts – Double your Gift
Your donations can have an even greater impact as many employers have a matching gift program. Simply obtain a Matching Gift Form from your employer.

Endowments – Gifts in Perpetuity
A gift of endowment shows your lasting dedication to the Viterbi Family Department of Ophthalmology, as the fund is maintained in perpetuity. This contribution can fund programs, lectures, awards, fellowships, research, laboratories and Chairs. Endowments create a lasting legacy, often carrying the name of the donor or a loved one.

SHILEY EYE INSTITUTE
UC SAN DIEGO
The Viterbi Family
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