

UCLA Stein Eye Institute

VISION-SCIENCE CAMPUS

Annual Report 2016–2017

Stein Eye Institute

ANNUAL REPORT

July 1, 2016–June 30, 2017

DIRECTOR

Bartly J. Mondino, MD

FACULTY ADVISOR

Debora B. Farber, PhD, DPhhc

MANAGING EDITOR

Tina-Marie Gauthier
c/o Stein Eye Institute
100 Stein Plaza, UCLA
Los Angeles, California 90095–7000
Email: gauthier@jsei.ucla.edu

EDITORS

Teresa Closson
Susan Ito
Peter J. López
Ellen Pascual
Debbie Sato
M. Gail Summers

GUEST WRITERS

Dan Gordon
Harlan Lebo

PHOTOGRAPHY

Reed Hutchinson
J. Charles Martin
Robin Weisz

DESIGN

Robin Weisz/Graphic Design

PRINTING

Colornet Press

Send questions, comments,
and updates to:
gauthier@jsei.ucla.edu.

To view the Annual Report online, visit:
uclahealth.org/Eye/annual-report

For more information
about the Institute, see:
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Dear Friends,

This academic year was marked by a celebration of the Stein Eye Institute's 50th anniversary and the grand re-opening of the Jules Stein Building—the Institute's flagship structure.

Since opening its doors in November 1966, the Institute has grown to become a vision-science campus at UCLA, recognized the world over for its excellence. Over the course of five decades, every aspect of Stein Eye's work has been refined and redefined: constantly improving methods for patient care, extraordinary advances in research to increase understanding of the challenges of the eye, growing outreach programs to bring vision care to the underserved both locally and globally, and expanded training for the next generation of ophthalmologists.

The Institute's original mandate still remains paramount today: the relentless drive for excellence and the constant search for new possibilities in the treatment of the eye. Vision science has seen incredible change over the past 50 years, and the exemplary, award-winning work of Stein Eye physicians and vision-scientists is leading the charge to preserve and restore vision.

Your contributions are key to our continued growth and future achievements in the preservation of sight. Thank you for your dedication to our shared mission.

I look forward to our next half century of progress!

Sincerely,

A handwritten signature in black ink that reads "Bartly J. Mondino".

Bartly J. Mondino, MD

Bradley R. Straatsma, MD, Endowed Chair in Ophthalmology
Director, Stein Eye Institute
Chairman, UCLA Department of Ophthalmology
Affiliation Chairman, Doheny Eye Institute



A Year in Review

JULY 1, 2016–JUNE 30, 2017

Grand Re-Opening of Jules Stein Building Celebrates 50 Years of Innovation and Achievement



The newly reconfigured Jules Stein Building stands as a testament to Dr. Jules Stein, a man whose vision and purpose has changed the lives of so many.

Celebration of the UCLA Stein Eye Institute's 50th anniversary year was capped off with the grand re-opening of the newly renovated Jules Stein Building at a festive event on April 20, 2017.

In addition to tours showcasing the award-winning redesigned interior and exterior of the Jules Stein Building, the ceremony held special significance, coming 50 years after the original dedication of the Institute's flagship structure—a milestone that signaled the beginning of an ongoing commitment to the preservation of sight that has impacted millions of patients, medical professionals, and researchers over the last five decades.

Speaking to the honored guests in attendance, **UCLA Chancellor Gene Block** reflected on the Institute's growth since opening its doors in November 1966: "The original dream for ophthalmology at UCLA has evolved into the Institute's bold transformation to a vision-science campus—an interconnected community of facilities and people in three buildings that merge research, training for new ophthalmologists, premier patient care, community outreach programs, and ongoing education for doctors worldwide."

Over the course of five decades, every aspect of Stein Eye's work has advanced, said **Bartly J. Mondino, MD**, director of the Stein Eye Institute and chairman of the UCLA Department of Ophthalmology, adding, "We see developments almost every day: greater precision, smaller incisions, more detailed imagery, better ways to identify problems, new treatment for the previously untreatable."

Present at the re-opening was **Bradley R. Straatsma, MD, JD**, founding director of the Stein Eye Institute and founding chairman of the UCLA Department of Ophthalmology, whose foresight and determination helped shape the Institute as we know it today. The Institute's founding families, the Steins and Wassermans, were represented at the event by two members of Stein Eye's Board of Trustees: **Gerald Oppenheimer**, son of Doris and Jules Stein, and **Casey Wasserman**, grandson of Edie and Lew Wasserman.

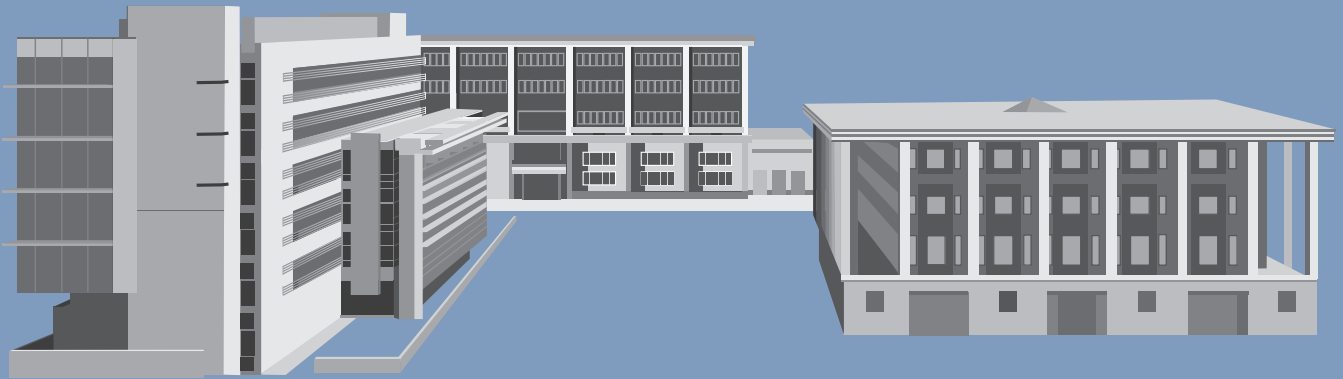
The expanded facilities enable UCLA to further broaden vision-science research and provide exemplary care for patients in the treatment of eye disease. Like the Edie & Lew Wasserman Building, the redesigned Jules Stein Building utilizes more glass and light and is LEED-certified. The renovated structure features two floors of new modular laboratories, which can expand and contract for researchers, as funding needs change. The comprehensive ophthalmology and glaucoma areas have been redesigned, as has the Center for Community Outreach and Policy, and Urgent Care is now its own separate unit.

Notably, the approximately \$65 million, 108,000-square-foot project was funded in large part by private philanthropy. "I am constantly moved by the deep and really visionary generosity of Stein Eye supporters," said **Kelsey Martin, MD, PhD**, dean of the David Geffen School of Medicine. "Their philanthropy has been so important in enabling Stein ophthalmologists and vision scientists to devote their careers to creating a future that's free of eye disease and blindness."

Since its opening, the Stein Eye Institute's surgical and outpatient-treatment volume has grown more than tenfold. And this ability to provide superb patient care took a dramatic leap in 2013 with the Institute's historic affiliation with the Doheny Eye Institute. The partnership formed a single, integrated UCLA Department of Ophthalmology, creating substantial opportunities for collaboration and research. Of immediate impact, more sectors of Los Angeles now receive greater access to quality patient care with the opening of Doheny Eye Center UCLA locations in Arcadia, Orange County, and Pasadena.



A modified entrance and multi-story atrium add natural light to the Jules Stein Building. The award-winning re-design thematically blends the flagship structure with the Doris Stein and Edie & Lew Wasserman Buildings.



A ROUTINE DAY AT THE INSTITUTE

1,000
PATIENTS

491
APPOINTMENTS

89
SURGICAL PROCEDURES

326
DIAGNOSTIC TESTS

115
POSTOPERATIVE CHECKUPS

DEPARTMENT GROWTH

1969	2016
23,000 PATIENT VISITS	230,000 PATIENT VISITS
1,827 SURGICAL PROCEDURES	30,184 SURGICAL PROCEDURES
1993	2016
\$4,370,000 CLINICAL REVENUE	\$46,594,000 CLINICAL REVENUE

Faculty Honors and Awards

- ▶ **Anthony J. Aldave, MD**, Walton Li Chair in Cornea and Uveitis, in October 2016 became the fourth surgeon in the world to implant 200 Boston keratoprotheses, a device used to help restore vision.
- ▶ **Anthony C. Arnold, MD**, Jerome and Joan Snyder Chair in Ophthalmology, was honored with the S. Rodman Irvine Prize at the UCLA Stein Eye Institute Clinical and Research Seminar on June 9, 2017, in Los Angeles, California.
- ▶ **Vikas Chopra, MD**, health sciences associate clinical professor, was awarded the Best Research Paper in the Glaucoma session at the October 2016 American Academy of Ophthalmology annual meeting in Chicago, Illinois.
- ▶ **Anne L. Coleman, MD, PhD**, The Fran and Ray Stark Foundation Chair in Ophthalmology, received the Suzanne Véronneau-Troutman Award at the October 2016 American Academy of Ophthalmology annual meeting in Chicago, Illinois.

Dr. Coleman was also elected to the National Academy of Sciences, Engineering, and Medicine—among the highest honors in the fields of health and medicine—on October 17, 2016.
- ▶ **Sophie X. Deng, MD, PhD**, associate professor of ophthalmology, received an Achievement Award at the October 2016 American Academy of Ophthalmology annual meeting in Chicago, Illinois.
- ▶ **Robert Alan Goldberg, MD**, Karen and Frank Dabby Endowed Chair in Ophthalmology, presented the John Wobig Lecture at Casey Eye Institute, Oregon Health and Science University, April 21, 2017, in Portland, Oregon.



Dr. Anthony Aldave in Bangkok, Thailand, implanting a Boston keratoprosthesis.



Dr. Lynn Gordon

- ▶ **Lynn K. Gordon, MD, PhD**, Vernon O. Underwood Family Chair in Ophthalmology, began her term as vice chair of the American Academy of Ophthalmology (AAO) Council at their October 2016 annual meeting in Chicago, Illinois. In April 2017, Dr. Gordon was nominated for a two-year position (2018–2019) as Chair of the AAO Council.

Dr. Gordon was also honored with the North American Neuro-Ophthalmology Society Merit Award at their April 5, 2017, annual meeting in Washington, D.C.

- ▶ **Michael B. Gorin, MD, PhD**, Harold and Pauline Price Chair in Ophthalmology, was presented with the Von Hippel-Lindau (VHL) Alliance Award at the VHL Alliance annual meeting September 23–24, 2016, at UCLA.
- ▶ **Alex A. Huang, MD, PhD**, assistant professor of ophthalmology, was ranked #1 of “Ophthalmology’s Top 50 Rising Stars” in *The Ophthalmologist* Power List 2017.
- ▶ **Sherwin J. Isenberg, MD**, Laraine and David Gerber Chair in Ophthalmology, was honored as a “Legend” by LA BioMed for his achievements in ophthalmology at a dinner and reception on November 15, 2016, in Los Angeles, California.



Dr. David I. Meyer (left) with Legend honoree Dr. Sherwin Isenberg and his wife Rina Isenberg. Photo: Stephanie Cartozian/Peninsula Magazine



Dr. Andrew Eller presented Dr. Michael Gorin (left) with the VHL Alliance Award.

- ▶ **M. Ali Khan, MD**, assistant professor of ophthalmology, received first place in *Ophthalmology Times’* 2016 MD Writer’s Award Program Competition.
- ▶ **Allan E. Kreiger, MD**, professor of ophthalmology emeritus, received the Taylor R. Smith Medal and gave the Taylor R. Smith Oration at the 763rd meeting of the New England Ophthalmological Society on March 3, 2017, in Boston, Massachusetts.
- ▶ **Colin A. McCannel, MD**, professor of clinical ophthalmology received both a Secretariat Award and a Senior Achievement Award at the October 2016 American Academy of Ophthalmology annual meeting in Chicago, Illinois.
- ▶ **Stacy L. Pineles, MD**, associate professor of ophthalmology, received an Achievement Award at the October 2016 American Academy of Ophthalmology annual meeting in Chicago, Illinois.

- ▶ **Srinivas R. Sadda, MD**, professor of ophthalmology, received a Senior Achievement Award at the October 2016 American Academy of Ophthalmology annual meeting in Chicago, Illinois.

Dr. Sadda was also the recipient of the Paul Henkind Award and presented the Paul Henkind Memorial Lecture at the 40th Annual Macula Society Meeting on June 8, 2017, in Singapore.

- ▶ **Alfredo A. Sadun, MD, PhD**, Flora Thornton Chair of Vision Research, presented the keynote address in neuro-ophthalmology at the annual meeting of the European Ophthalmological Society on June 13, 2017, in Barcelona, Spain.

Dr. Sadun also gave the Distinguished Alumnus Lecture at the annual meeting of the Massachusetts Eye and Ear Infirmary on June 24, 2017, in Boston, Massachusetts.

- ▶ **Federico G. Velez, MD**, health sciences associate clinical professor of ophthalmology, presented the William E. Scott Lecture at the University of Iowa on March 20, 2017, in Iowa City, Iowa.

Dr. Velez also gave the keynote lecture at the Brazilian Council of Strabismus on May 20, 2017, in São Paulo, Brazil.

- ▶ **Barry A. Weissman, OD, PhD**, professor of ophthalmology emeritus, was recognized in the September 1, 2016, issue of *Contact Lens Spectrum*, as one of the “Top 30 Most Influential in Contact Lenses” for his contributions to the betterment and advancement of the field.



Dr. Barry Weissman



JULES STEIN EYE INSTITUTE, University of California Medical Center, Los Angeles

Jules Stein Eye Institute, circa 1966



Jules Stein Building is an Award Winner!

The Jules Stein Building received the 2017 Westside Prize from the Urban Forum for public/institutional design. The award is granted annually to buildings that exemplify good architecture in Los Angeles. The honor was presented to Stenfors Associates Architects, the design firm behind the renovation of the Jules Stein Building, at a ceremony in Santa Monica, California, on June 9, 2017.



Stein and Doheny Eye Institutes Best in the Western United States for Eye Care

The Stein and Doheny Eye Institutes continue to consistently rank Best in the West and No. 5 in the nation, according to *U.S. News & World Report*.

EyeMBA: Combining Residency and Business Administration

The Stein Eye Institute has created another national first for medical education by working with the David Geffen School of Medicine at UCLA and the UCLA Anderson School of Management to develop EyeMBA, a master's of business administration degree that is earned in tandem with an ophthalmology residency—the only joint program of its kind.

“EyeMBA was developed in recognition that future leaders in ophthalmology will need the financial, management, and measurement skills that are at the core of an MBA curriculum,” says **Stacy L. Pineles, MD**, assistant residency director for the UCLA Department of Ophthalmology. “EyeMBA residents gain skills that are broadly applicable to ophthalmologic leadership in academia, translational research, health system management, health care delivery, and biomedical industry.”

New Faculty

M. Ali Khan, MD, was appointed assistant professor of ophthalmology on September 16, 2016. Dr. Khan specializes in the medical and surgical treatment of vitreoretinal disease, and his research interests include proliferative vitreoretinopathy, diabetic retinopathy, and retinal imaging modalities. Dr. Khan sees patients at Doheny Eye Center UCLA offices in Arcadia and Pasadena.

Following a Study Abroad Program in International Law at the Graduate Institute of International Studies in Geneva, Switzerland, Dr. Khan graduated summa cum laude from the University of Southern California with a Bachelor of Arts degree in political science and biological sciences. He obtained his doctorate from the David Geffen School of Medicine at UCLA and conducted his medical internship at Cedars-Sinai Medical Center. Dr. Khan's residency and fellowship in vitreoretinal surgery were at Wills Eye Hospital in Philadelphia, Pennsylvania.



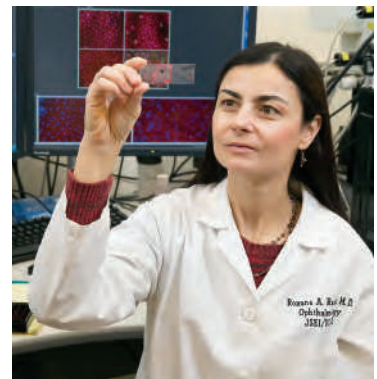
Gavin G. Bahadur, MD, a full-time ophthalmologist at the Stein Eye Center–Santa Monica, was promoted to assistant clinical professor of ophthalmology in January 2017. Dr. Bahadur specializes in comprehensive ophthalmology, including cataract, pterygium, and glaucoma surgery. In addition to his clinical duties at the Stein Eye Center–Santa Monica, Dr. Bahadur teaches medical students during their ophthalmology surgical subspecialties rotation. His research interests include medical informatics and health care policy.

After obtaining his medical degree with a citation for academic excellence—outstanding ranking at Brown University, Dr. Bahadur conducted an internship in neurology, infectious disease, and cardiology at St. Joseph Mercy Hospital, University of Michigan, in Ann Arbor, Michigan. He conducted his residency and fellowship training in glaucoma and anterior segment at the Manhattan Eye, Ear, and Throat Hospital in New York, New York.



Roxana A. Radu, MD, a basic science researcher at the Stein Eye Institute, has been promoted to assistant professor. Dr. Radu is a medical doctor who trained as a biochemist during her postdoctoral fellowship at the Institute. With a particular interest in the metabolism of vitamin A in the eye, Dr. Radu has been involved in evaluating the effects of retinoids in different organs in collaborative projects.

Dr. Radu obtained her Bachelor of Science degree in mathematics and physics from the Frații Buzești National College in Romania, and she received her doctoral degree from the University of Craiova School of Medicine in Romania. She conducted her postdoctoral fellowship in retinoid biochemistry at the UCLA School of Medicine Department of Ophthalmology and Biological Chemistry, and she became an Institute researcher in 2004.



Proactive Approach to Treating Ocular Melanoma Improves Visual and Survival Outcomes



Small choroidal melanoma in the macula.

A proactive approach to detecting and treating small ocular melanoma is leading to better visual and mortality outcomes for patients, according to **Tara McCannel, MD, PhD**, director of the UCLA Stein Eye Institute's Ophthalmic Oncology Center. The approach represents a significant shift from the way these tumors were treated in the past, Dr. McCannel notes.

Although extremely rare, ocular melanoma is a potentially fatal ophthalmic condition—in approximately half of patients, the cancer spreads to the liver. While new treatments may prolong survival, there is no cure once the cancer metastasizes, and the consensus has been that little can be done to reduce the risk of metastasis, Dr. McCannel explains.

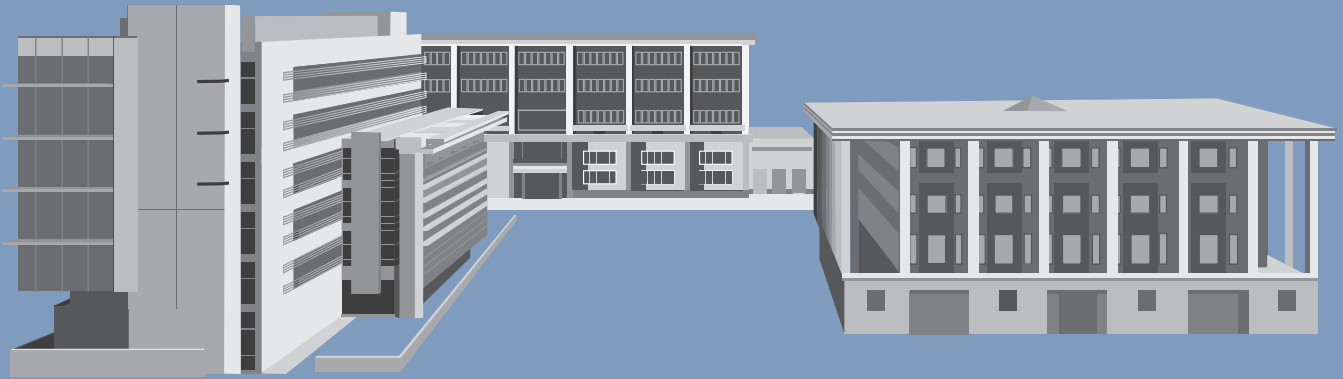
Small melanomas generally present when they begin to distort vision—typically when they are near or at the macula. “We know that larger tumors have a higher risk of metastasis, while very small tumors are considered to be low risk,” Dr. McCannel says. “So traditionally, rather than treating the macula and risking visual harm, it has been considered acceptable to simply monitor the small melanomas.” Unfortunately, Dr. McCannel notes, these tumors will continue to grow and eventually have a significant effect on the patient's vision. At that point, the melanoma is larger, requiring more radiation to treat it and leading to a poor visual outcome and higher risk of metastasis.

Recent reports of ocular melanoma outcomes have shown that when controlling for tumor size, the rate of metastasis is much higher among patients who experience a tumor recurrence in the eye than among patients who have successful treatment of the primary eye cancer. “This suggests that promptly controlling the tumor *does* matter, and that our treatments are having an impact in reducing the likelihood of metastasis,” Dr. McCannel says.

“Our feeling is that the best time to intervene is when the melanoma is small, because you can use a limited amount of radiation and spare the vision,” says Dr. McCannel. “Now we have data suggesting that this early treatment may help to improve survival, which is a 180-degree turn from the conventional teaching and practice in ocular oncology.”

For more than six years, Dr. McCannel and her colleagues at the Stein Eye Institute's Ophthalmic Oncology Center have employed silicone oil to prevent or reduce radiation retinopathy in ocular melanoma patients. Radiation therapy with iodine-125 is considered the gold standard, but healthy tissue may be damaged by the radiation treatment. In 2010, Dr. McCannel's group first demonstrated that silicone oil can act as a barrier to reduce the amount of radiation exposure to the healthy eye tissue. More recently, the researchers found that after one year, there were significant benefits to the vision of patients with large ocular tumors who were treated with the silicone oil vs. those who were not. “Silicone oil has become a very important tool for minimizing radiation damage while still allowing for effective treatment of the melanoma,” Dr. McCannel says.

Although treatment for ocular melanoma remains a challenge and the potential side effects and risks to vision and life continue to be significant, there is cause for optimism. “We are in a new era for ocular melanoma,” Dr. McCannel concludes. “No longer do we believe that ‘less is more.’ We are now much more proactive, with a focus on early detection and treatment of melanoma, early detection of ocular side effects from treatment, and early detection of systemic complications that can occur with this cancer.”



LABORATORY RESEARCH

DIRECT DOLLARS

1972	2015
\$479,748	\$6,037,310

CLINICAL RESEARCH

DIRECT DOLLARS

1978	1998	2015
\$28,449	\$589,483 CLINICAL RESEARCH CENTER ESTABLISHED	\$1,846,096

CLINICAL RESEARCH STUDIES

1999	2015
32	79

Stem Cell Therapy for Blinding Eye Disorder

With a \$4.25 million grant from the California Institute for Regenerative Medicine, a Stein Eye research team headed by **Sophie X. Deng, MD, PhD**, associate professor of ophthalmology, will complete late-stage clinical studies to develop therapy using cultivated autologous limbal stem cells in the treatment of limbal stem cell deficiency (LSCD).

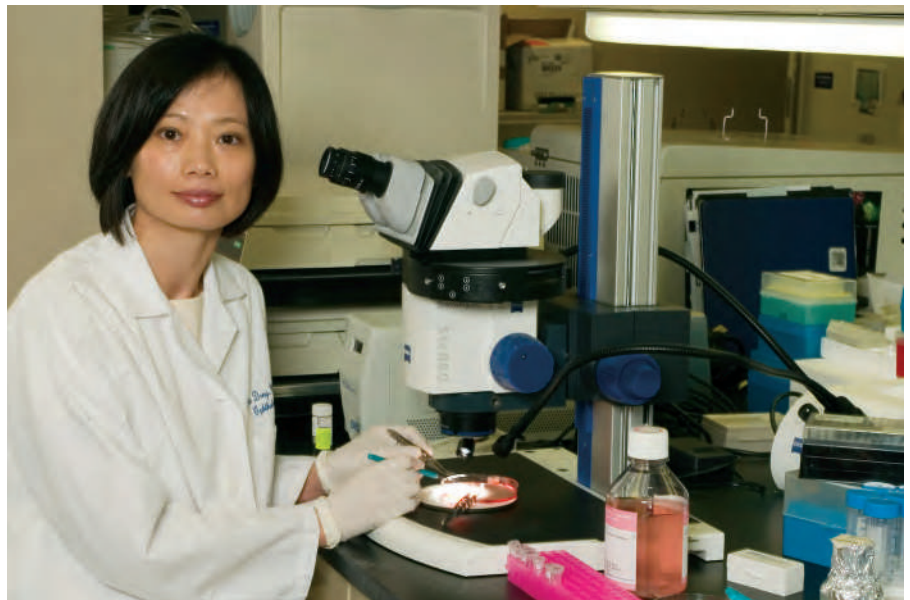
LSCD can lead to severe loss of vision and even blindness. Caused by a lack of functioning corneal epithelial stem cells, it is seen in many common ocular disorders, such as chemical injuries, chronic conjunctivitis, or issues caused by multiple eye surgeries or contact lens wear.

Limbal stem cells replenish the cells on the surface of the cornea (the epithelial cells), which are essential to maintaining the integrity and transparency of the cornea. With the loss of these progenitor stem cells, the surface of the cornea becomes compromised and vulnerable to infection and scarring.

“A corneal transplant cannot treat LSCD as the corneal epithelium must be healthy prior to corneal transplant surgery,” explains Dr. Deng. “Through therapy with limbal stem cells, the surface of the epithelium can be restored—and a corneal transplant can then be successful and improve vision.”

Dr. Deng’s laboratory has developed a robust culture method for replenishing limbal stem cells that is free of animal products and eliminates any potential risk of cross-contamination. “When limbal stem cells can be grown in a culture, only a small amount of donor tissue is needed,” says Dr. Deng. “The cultured cells are then transplanted to the eye with LSCD to restore a healthy corneal epithelium.”

Dr. Deng’s team is also using new in vivo imaging techniques to assess the function of limbal stem cells in patients.



“We are excited to have received this continued support from the California Institute for Regenerative Medicine. Their funding allowed us to perform the translational work that got us to this stage,” says Dr. Sophie Deng, “and now we are ready to raise the bar for this therapy and move toward a clinical trial.”

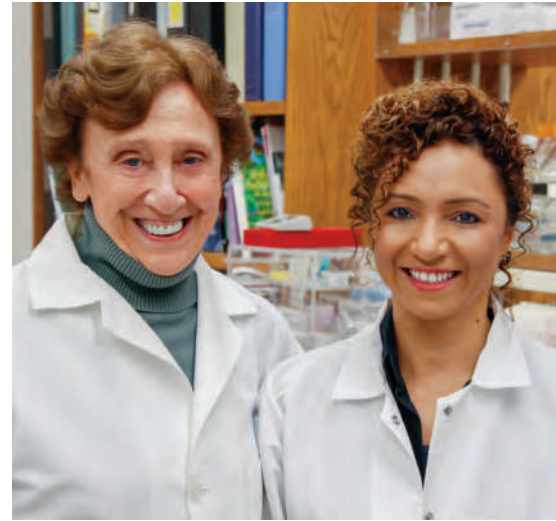
Researchers Discover New Gene to Screen Ocular Albinism

The quest for better understanding and finding cures for ocular albinism—a rare genetic vision disorder—is closer due to a recent discovery by Stein Eye Institute vision-science researchers.

Until recently, ocular albinism was believed to be caused solely by mutations in the OA1 gene, but Principal Investigator **Debora Farber, PhD**, Karl Kirchgessner Foundation Chair in Vision Science, and **Alejandra Young, PhD**, assistant project scientist, found that mutations in a second gene, GNAI3, can trigger ocular albinism.

Ocular albinism is a genetic eye disease that is transmitted through the X chromosome. Affected individuals typically suffer from reduced visual acuity, rapid and involuntary eye movements, eyes that do not look in the same direction, and increased sensitivity to light.

With this clearer understanding, scientists are ever closer to improving vision for those who suffer from this disease.



Through a recent discovery by Dr. Debora Farber (left) and Dr. Alejandra Young (right), vision scientists are closer to improving sight for thousands of children.



The renovation of the Jules Stein Building includes the addition of state-of-the-art modular laboratories that expand and contract as needed. The increased space opens the door to recruitment of more vision scientists and development of revolutionary programs to treat eye disease.

Resident and Fellow Graduation

“Congratulations” was the word of the day at the Stein Eye Institute/Doheny Eye Institute resident and fellow graduation on June 2, 2017.

Awards for excellence in research were presented to the following graduates:

- ▶ **Shawn Lin, MD**, was presented with the Robert E. Christensen, MD, Research Award.
- ▶ **Daniel Su, MD**, was given the Resident Research Award.
- ▶ **Melinda Chang, MD**, received the Clinical Fellow Research Award.
- ▶ **Tamara Lenis, MD, PhD**, was given the Predoctoral Fellow Research Award.
- ▶ **Negin Ashki, PhD**, was presented with the Postdoctoral Fellow Research Award.
- ▶ **Andrea Govetto, MD**, was the recipient of the International Fellow Research Award.
- ▶ **David Xu, MD**, was presented with the ARVO Young Investigator Travel Award.

In recognition of his contributions to residency education, **Uday Devgan, MD, FACS, FRCS**, clinical professor of ophthalmology and chief of ophthalmology at Olive View-UCLA Medical Center, was honored with the Faculty Teaching Award.



Graduating Class of 2017

Clinical and Research Seminar Celebrates Institute's Golden Anniversary

Focusing on emerging vision research across ophthalmic subspecialties, the UCLA Stein Eye Institute held its most prestigious academic event on June 9, 2017—the Clinical and Research Seminar.

In addition to prestigious named lectures, the Seminar held special resonance for this year's attendees, as it was presented in conjunction with the Institute's golden anniversary and included three celebratory sessions. Founding Director and Founding Chairman of the UCLA Department of Ophthalmology, **Bradley R. Straatsma, MD, JD**, spoke to the Institute's history with the presentation "Jules Stein, MD: Ophthalmologist, Entertainment Magnate, and Advocate for Vision"; **Anne L. Coleman, MD, PhD**, director of the Stein Eye Institute Centers for Community Outreach and Policy, Eye Epidemiology, and the UCLA Mobile Eye Clinic, discussed the Institute's commitment to community outreach and its impact on eye health; and **Bartly J. Mondino, MD**, director of the Institute and chairman of the UCLA Department of Ophthalmology, highlighted the Institute's transformation to a vision-science campus and its advancements in education, patient care, and research.



At the 2017 Clinical and Research Seminar, Dr. Anthony Arnold, Jerome and Joan Snyder Chair in Ophthalmology, was awarded the S. Rodman Irvine Prize, which honors excellence in the UCLA Department of Ophthalmology Faculty. Left to right: Dr. Bartly Mondino, Dr. Arnold, and Dr. Stacy Pineles.



48TH JULES STEIN LECTURER David W. Parke II, MD

Chief Executive Officer
Executive Vice-President
American Academy of Ophthalmology



15TH BRADLEY R. STRAATSMA LECTURER

David R. Williams, PhD

Dean for Research of Arts, Science,
and Engineering
William G. Allyn Professor of Medical
Optics, Director of the Center for Visual
Arts, University of Rochester



15TH THOMAS H. PETTIT LECTURER

Eduardo C. Alfonso, MD

Chairman of the Department of
Ophthalmology
Kathleen and Stanley J. Glaser
Chair in Ophthalmology,
Director of the Bascom Palmer
Eye Institute,
University of Miami Miller School of
Medicine



2016 Vision Science Retreat

22nd Annual Vision Science Retreat

The Stein Eye Institute Vision Science Retreat celebrated its twenty-second year October 7–9, 2016, at the UCLA Lake Arrowhead Conference Center. In attendance were 68 basic scientists, clinical researchers, postdoctoral fellows, graduate students, and invited guests who participated in scientific discussions, learning activities, and social events. The following retreat attendees were honored for their work:

Best Oral Presentations

Jean-Pierre Hubschman, MD
 Chi Zhang, PhD (Zheng Lab)
 Margaux Kreitman (Hubbell Lab)

Best Posters

Sachin Parikh (Gorin Lab)
 Kaushali Thakore-Shah, PhD (Deng Lab)
 Stefanie Volland, PhD (Williams Lab)



Dr. Kevin Miller guides ophthalmology residents and fellows in the fundamentals of cataract surgery.

Hands-On Training in Cataract Surgery

Residents and fellows from UCLA, USC, UCI, UCSD, Loma Linda University, Arrowhead Regional Medical Center, and the Naval Medical Center attended the Bausch & Lomb Basic Cataract Surgery Course in Irvine, California, on October 29, 2016. Presentations included all steps of cataract surgery from obtaining informed consent through postoperative instructions. At afternoon skills-transfer laboratories, attendees gained hands-on experience with ocular biometry, corneal mapping, lens power calculation, intraocular lens implantation, pupil management, surgical microscope set up and use, phacoemulsification equipment priming and tuning, and pig eye cataract surgery.

“Training programs in Southern California recognize the value of these courses,” says **Kevin M. Miller, MD**, who oversees this activity and is chief of the Cataract and Refractive Surgery Division at the Stein Eye Institute. “We offer this basic course in the fall, and teach an advanced cataract surgery course in the spring. Attendance is extremely high, which speaks to the program’s success and popularity.”

Comprehensive Ophthalmology Review Course

The Stein Eye Institute (SEI) and the Doheny Eye Institute (DEI) presented the Annual DEI/SEI Comprehensive Ophthalmology Review Course on February 9–12, 2017, at the UCLA Stein Eye Institute’s Research to Prevent Blindness Auditorium.

Directed by **John A. Irvine, MD**, and **Sherwin J. Isenberg, MD**, the four-day course reviews the clinical essentials of each ophthalmic subspecialty and is aimed at ophthalmologists and trainees. The course is clinically oriented and concentrates on the epidemiology, clinical presentation, diagnosis, and management of ophthalmologic disease. The educational event helps to prepare attendees for ophthalmic knowledge assessment programs and recertification examinations. In addition, the course covers important clinical principles of ophthalmology and updates participants on any changes to traditional clinical protocols.

International Retinal Imaging Symposium

The 5th annual International Retinal Imaging Symposium was held at the UCLA Ronald Reagan Medical Center on March 25, 2017. Meeting co-directors, **David Sarraf, MD**, **K. Bailey Freund, MD**, and **SriniVas R. Sadda, MD**, organized a robust schedule of lectures, and the symposium featured over 40 retinal imaging experts from throughout the world. Innovative topics in retinal imaging were covered, including spectral domain and swept source optical coherence tomography (OCT) angiography, en face OCT, adaptive optics, auto fluorescence, and wide field angiography.

Pacific Retina Club

The Pacific Retina Club met at the UCLA Ronald Reagan Medical Center on March 24, 2017. Approximately 70 interesting retinal cases were presented to attendees by local, national, and international retinal specialists—as well as residents and fellows interested in retinal disease. The meeting, offering educational discussion and insightful exchange, was organized by **David Sarraf, MD**, **SriniVas R. Sadda, MD**, and **H. Richard McDonald, MD**.

Optometric Symposium on Advances in Eye Care

The UCLA Stein Eye Institute was host to the January 22, 2017, symposium “Advances in Eye Care,” which focused attention on glaucoma diagnosis and treatment. Lectures were presented by course faculty, **Vikas Chopra, MD**, **Brian Francis, MD, MS**, **Alex Huang, MD, PhD**, **Jason Ng, OD, PhD**, **Jerry Paugh, OD, PhD**, **William Ridder, III, OD, PhD**, and **James Tan, MD, PhD**. The joint one-day event is organized between the UCLA Stein Eye Institute, the Doheny Eye Institute, and the Southern California College of Optometry at Marshall B. Ketchum University.

Community Outreach

Access to a Cure is Access to Care

Continuing its annual tradition, the UCLA Mobile Eye Clinic (UMEC) participated in Care Harbor Los Angeles, a health fair in downtown Los Angeles where approximately 2,200 uninsured, underinsured, and at-risk people from across Southern California obtain free medical, dental, vision, and preventive care.

Using the UMEC bus as their base, the UCLA Stein Eye Institute's team of technicians and volunteer ophthalmologists serve Care Harbor's mission to promote the health and well-being of underserved populations. At the January three-day event, 141 patients were evaluated—often with unexpected results. For example, iritis, a retinal detachment, and glaucoma were discovered in one male patient who had not received an eye examination in three years. Another young patient was diagnosed with a retinal detachment, macular holes, and cataracts. At-risk individuals like these are referred for further evaluation and treatment that is often free.

The critical role the UMEC plays in our most vulnerable populations cannot be overstated. "Care Harbor is a way to reach out, provide care, and make sure members of our community don't lose their vision and go blind," says **Anne L. Coleman, MD**, The Fran and Ray Stark Foundation Chair in Ophthalmology, and director of the Stein Eye Institute's Center for Community Outreach and Policy, Eye Epidemiology, and the UCLA Mobile Eye Clinic.

New Resource for Obtaining Eye Care

The UCLA Mobile Eye Clinic (UMEC) has been providing free eye care services and glasses for underserved communities in Los Angeles County for over 40 years. And now accessing that care is simpler than ever, with the UMEC's new website: ucla-health.org/mobile-eye-clinic.

Launched November 4, 2016, the UMEC website includes a **calendar** so that patients can find dates, times, and locations of upcoming UMEC clinics, as well as a listing of **low-income clinics** in the Los Angeles community that offer health and eye care services. A **vision care resources page** lists organizations aligned with the UMEC's mission to provide vision services at low or no cost to the most vulnerable members of our community.



The privately funded UCLA Mobile Eye Clinic has been honored for exemplary leadership in shaping the future of health care.

VISION CARE ON WHEELS



UCLA MOBILE EYE CLINIC

1975	2016
613 PATIENTS SEEN	27,800 PATIENTS SEEN
10 TRIPS MADE	1,200 TRIPS MADE
APPROXIMATELY 300,000 PATIENTS SEEN	

The UCLA Mobile Eye Clinic (UMEC), established in 1975, is one of the first and longest continuously operating projects using a motor vehicle to deliver high quality, completely free, privately funded ophthalmic eye care to underserved populations. The anonymous benefactor, "Uncle Claude," who initiated the project, wanted to give disadvantaged children, the elderly, and Native Americans "a leg up in life." The clinic has been in continuous operation since its founding, serving its one-hundred-thousandth patient during the year of its 25th anniversary.

The UMEC earned the 2015 Innovation Award for Community Service from the Los Angeles County Medical Association and the Patient Care Foundation of Los Angeles County for exemplary leadership in shaping the future of health care.



Drs. Carrie Golden, Robert Alan Goldberg, and Greg Kokame, Class of 1987.

Stein and Doheny Celebrate Milestone Anniversaries at Joint Alumni Reception

Over 300 UCLA Stein Eye and Doheny Eye Institute faculty members, along with resident and fellow alumni from around the world, gathered in Chicago, Illinois, on October 16, 2016, for the UCLA Stein Eye Institute Alumni Association and Doheny Eye Institute Professional Alumni Association's annual reception. Hosted by both associations, the gathering provided an opportunity for alumni from various graduating classes to reconnect with colleagues and classmates.

At the event, **Bartly J. Mondino, MD**, chairman of the UCLA Department of Ophthalmology and director of the Stein Eye Institute, acknowledged both the 50th Anniversary of the Stein Eye Institute and the 70th Anniversary of the Doheny Eye Institute. Toasting the alumni, Dr. Mondino said, "The past 50 and 70 years respectively, have been an amazing journey for the faculty and staff who worked at these Institutions, for the doctors and students who trained, for the patients treated, and for the exceptional donors and friends who supported their mission."



Dr. Vikas Chopra, medical director of the Doheny Eye Center UCLA-Pasadena, and Dr. Bradley Straatsma, founding chairman of the UCLA Department of Ophthalmology and founding director of the Stein Eye Institute.



(L to R) Ms. Marissa Goldberg, executive director and chief financial officer of the Doheny Institute, Dr. Srinivas Sadda, president and chief scientific officer of the Doheny Eye Institute, and Dr. Alfredo Sadun, vice chairman of the Doheny Eye Center UCLA, join Dr. Bartly Mondino, chairman of the UCLA Department of Ophthalmology and Dr. Anne Coleman, vice chairman of academic affairs, UCLA Department of Ophthalmology.



Dr. Howard Krauss (L) joins Dr. Christopher Fleming and Mrs. Leslie Fleming, and Dr. J. Bronwyn Bateman.

AAO Awards of Achievement to Alumni

UCLA Stein Eye Institute alumni were honored for their contributions to the profession at the October 2016 American Academy of Ophthalmology (AAO) annual meeting in Chicago, Illinois.

- ▶ **Paul S. Bernstein, MD, PhD**, clinical fellow (1990–1993) and Bradley R. Straatsma Lecturer (2004), received the Outstanding Humanitarian Service Award.
- ▶ **Kimberly A. Drenser, MD, PhD**, residency alumnus (2000–2003), was presented with the AAO Senior Achievement Award.
- ▶ **David B. Glasser, MD**, residency alumnus (1980–1983) and Thomas H. Pettit Lecturer (2009), was given the Life Achievement Honor Award.
- ▶ **John A. Hovanesian, MD, FACS**, clinical fellow (1997–1999), received the Senior Achievement Award.
- ▶ **Randall J. Olson, MD**, residency alumnus (1974–1977) and Jules Stein Lecturer (2013), was presented with the Secretariat Award.
- ▶ **Stuart R. Seiff, MD**, clinical fellow (1984–1985) and Thomas H. Pettit Lecturer (2008), received the Secretariat Award and Life Achievement Honor Award.

Dr. John Chang Takes Leadership Role in Ophthalmology

Stein Eye residency alumnus, **John Chang, MD**, (1987–1990), has begun serving a two-year term as president of the International Society of Refractive Surgery. Dr. Chang is past president of the Hong Kong Association of Private Eye Surgeons, is on the executive committee of the Asia-Pacific Association of Cataract & Refractive Surgeons, serves on the editorial board of *Cataract & Refractive Surgery Today* and *Ocular Surgery News*, and is chief editor of the Chinese edition of *EuroTimes*. Dr. Chang is associate clinical professor at the University of Hong Kong and the Chinese University of Hong Kong, and he is the director of the Guy Hugh Chan Refractive Surgery Centre of Hong Kong Sanatorium & Hospital. A clinical instructor specializing in refractive intraocular lenses and procedures, Dr. Chang teaches doctors in the Asia-Pacific region and has received numerous honors in recognition of his educational activities and service to ophthalmology.



Dr. John Chang

Dr. Amani Fawzi Receives Endowed Professorship

At a formal Investiture on June 22, 2017, **Amani A. Fawzi, MD**, received the Cyrus Tang and Lee Jampol Endowed Professorship in the Department of Ophthalmology at Northwestern University. **Bradley R. Straatsma, MD**, founding director of the Stein Eye Institute, served as Extoller at the event. Dr. Fawzi received her medical degree with honors from Cairo University in Egypt. She completed an international research fellowship at the Stein Eye Institute (1998–2000), followed by a second ophthalmology residency (2001–2004), and she rounded out her training with a vitreoretinal surgical fellowship at the Doheny Eye Institute. Dr. Fawzi presented the Thomas H. Pettit Lecture in 2014 at the Institute's Clinical and Research Seminar. She currently divides her time between her clinical/surgical practice and National Institutes of Health-funded research at Northwestern University.



Dr. Bradley Straatsma (right) shown with Dr. Amani Fawzi at the Investiture.



Jean Stein

February 9, 1934–April 30, 2017

It was with great sadness that we reported the passing of Jean Stein, the eldest daughter of Jules and Doris Stein, who carried forward her family's love of art and dedication to philanthropy.

Jean was born in Los Angeles in 1934 and raised with her sister, Susan, and stepbrothers, Harold and Gerald Oppenheimer. Following private school in Switzerland, she attended Wellesley College in Massachusetts before moving to Paris and studying at the Sorbonne.

By the mid-1950s, Jean was working at the *Paris Review*, interviewing notable figures, including novelist William Faulkner. In the 1960s, Jean moved to New York and worked with respected magazine editor, Clay Felker. In her Upper West Side apartment, Jean hosted dynamic salons that included authors, politicians, artists, scientists, and cultural icons. "I am very interested in these different worlds coming together, so you're not only writing, you're not only art, you're not only science, you're bringing them together," she told the *Los Angeles Times* in 1980.

Credited as a pioneer of the narrative form of oral history, Jean authored three books. *American Journey: The Times of Robert Kennedy* was edited by George Plimpton and published in 1970. Her second book, *Edie: American Girl*, published in 1982, was based on the life of Andy Warhol muse Edie Sedgwick and was received with great enthusiasm. Norman Mailer pronounced, "This is the book of the Sixties that we have been waiting for." The *New York Times* described Stein's interviews for "Edie" as thorough and relentless, noting she spent a decade interviewing subjects—returning to some individuals as many as 15 times. Critic Maria Russo wrote, "Stein's expertly collaged narratives offered a glimpse of what seems like deep truth—as close as we're going to come to the real story of anything." *West of Eden: an American Place*, Jean Stein's final book, was published by Random House in 2016.

In addition to her writing, Jean retained a deep interest in the Stein Eye Institute and its activities. Upon learning about the affiliation agreement between the Stein Eye Institute and Doheny Eye Institute, Jean responded to Bartly J. Mondino, MD, director of the Institute, "It is a strong alliance between the two institutions, and you are to be congratulated for bringing this collaboration into fruition."

Jean was married to William vanden Heuvel, an attorney, former U.S. ambassador, and member of John F. Kennedy's administration, and later to Torsten Wiesel, a Nobel Prize winning neuroscientist. She is survived by her brother Gerald Oppenheimer (Gail Oppenheimer); daughters Katrina vanden Heuvel (Stephen Cohen), publisher and editor of *The Nation* magazine and a member of the Stein Eye Institute Board of Trustees, and Wendy vanden Heuvel, an actress and producer; and granddaughter Nicola Cohen.

"Our condolences go out to Jean's family," said Dr. Mondino. "She will be deeply missed."

Harry S. Brown, MD, FACS

August 1, 1930–April 16, 2017

A UCLA Department of Ophthalmology resident alumnus (1967–1970), Dr. Brown founded Surgical Eye Expeditions, an organization that has provided the gift of sight to 500,000 people worldwide and vision care to over 3.8 million individuals in over 80 countries.

**Norman E. Byer, MD**

April 2, 1926–August 13, 2016

Dr. Byer was a respected member of the UCLA Department of Ophthalmology volunteer faculty for more than three decades. He was the recipient of the Department's S. Rodman Irvine Prize, in recognition of his professional excellence and dedication to teaching future generations of ophthalmologists.

**Albert T. Milauskas, MD, FACS**

June 27, 1936–December 14, 2016

Dr. Milauskas was a longtime member of the Institute's volunteer clinical faculty, contributing countless hours teaching cataract surgery to residents and fellows in Southern California.

**Louis Rosenberg, OD**

April 1, 1923–July 5, 2016

Dr. Rosenberg, a retired optometrist, was an invaluable member of the JSEI Affiliates, the volunteer arm of the Stein Eye Institute, providing free comprehensive vision screenings to preschool children across Los Angeles.

**Thomas R. Singer, MD**

August 5, 1956–October 28, 2016

A UCLA Department of Ophthalmology resident alumnus (1983–1986), Dr. Singer was in private practice in Portage, Michigan.



JSEI Affiliates Share the Gift of Sight

Community Service

The JSEI Affiliates, the volunteer arm of the Stein Eye Institute established in 1990, accomplished impressive community outreach results this academic year—results that would not have been possible without the commitment of generous members and donors and the dedication of our over 130 volunteers.

Vision Education—Educating Students About Vision

Vision IN-School (VIS) is a vision education program offered free of charge to fourth- through seventh-grade public school students in Los Angeles. The curriculum is fun and interactive, and JSEI Affiliates volunteers teach students about the anatomy of the eye, eye safety, and injury prevention with the goal of inspiring children to protect their precious gift of sight for a lifetime of good vision. The highlight of each in-class presentation is a hands-on dissection of a bovine eye. Forty-four VIS volunteers visited 32 classrooms this past year, presenting the curriculum to 980 elementary students.

The S.E.E. video, a new educational tool, was introduced in the 2016–2017 Vision IN-School curriculum. Set to the familiar tune of Do Re Mi from *The Sound of Music*, the short video uses the acronym “SEE” to reinforce three important tools for maintaining eye health: wearing **S**unglasses to protect vision; **E**ating healthy foods, especially dark, leafy greens; and having regular eye **E**xaminations. The video was created in memory of JSEI Affiliates past president and Vision IN-School volunteer, Cherie Hubbell.



Dr. Ned Van Eps (center) teaches middle schoolers about anatomy by dissecting a bovine eye.

Make Surgery Bearable Program

Two successful sponsorship drives were held this year for the JSEI Affiliates’ Make Surgery Bearable program, an initiative that provides Dr. Teddy bears to each pediatric patient undergoing eye surgery at the Stein Eye Institute. The cuddly bears dressed in green scrubs and tagged with the name of the donor, help children feel comforted and secure during what could otherwise be a frightening time.

Accompanying Dr. Teddy, the JSEI Affiliates created both an English and Spanish version of *Making Eye Surgery Bearable*. The children’s book, written at the suggestion of the Pediatric Ophthalmology and Strabismus Division, helps pediatric patients and parents feel more comfortable with the surgical experience by providing age-appropriate information about what they can expect when they come to the Stein Eye Institute.



Dr. Teddy provides pediatric surgical patients with cuddly comfort.

MagniVision Program

The Affiliates MagniVision program provides financial and volunteer support for the UCLA Vision Rehabilitation Center (VRC). Volunteers train low-vision patients on the use of magnifiers and various vision aids, and financial assistance from the Affiliates enables purchase of low-vision tools for the VRC lending library.

Preschool Vision Screening

The Affiliates Preschool Vision Screening program began 17 years ago with the inspiration and support of Mrs. Gloria Kaufman and under the supervision of the late Dr. Leonard Apt, founding chief of the Division of Pediatric Ophthalmology and Strabismus. During the 2016–2017 school year, 54 JSEI Affiliates volunteers, under the supervision of three retired optometrists, visited 33 preschools to screen 819 children between three and five years of age.

Shared Vision Program

The Affiliates Shared Vision program collected and recycled approximately 1,850 donated eyeglasses for those in need this year. Recycled eyeglasses were cleaned, tagged with the vision correction, and distributed to clinic missions conducted by nonprofit groups in Africa, Central America, and other low-resource regions.

Vision Walk

On November 12, 2016, Team Stein Eye participated in the tenth annual Los Angeles Foundation Fighting Blindness Vision Walk, which was held at Woodley Park in the San Fernando Valley. The event, supported by both Stein Eye Institute employees and volunteers from the JSEI Affiliates, raised funds for retinal eye disease research.



Volunteer Alice Hirsh at Mount Olive Preschool in Santa Monica.



Catching an eye issue early helps to ensure a student's future success in the classroom.



JSEI Affiliates President, Marcia Lloyd, at a Vision IN-School presentation.



Dr. Leonard Apt

A Life Dedicated to Pediatric Ophthalmology

Leonard Apt, MD, was a true Renaissance man: a scholar, clinician, scientist, philanthropist, patron of the arts, sports enthusiast, and wine connoisseur. A founding member of the UCLA Stein Eye Institute, Dr. Apt—an eye surgeon and an emeritus professor of ophthalmology—was one of the first physicians in the world to become board-certified in both pediatrics and ophthalmology. He devoted his career to preventing blindness in children.

Dr. Apt left a tremendous legacy gift of more than \$15 million through his estate to support the Division of Pediatric Ophthalmology. The Leonard Apt, MD, Pediatric Fellowship Fund, The Leonard Apt, MD, Pediatric EyeSTAR Residency Training Fund, and the Leonard Apt, MD, Pediatric Ophthalmology Fund were established by the Leonard Apt Trust, memorializing his legacy. “This funding is an important resource for pediatric ophthalmology, and we are humbled by Leonard’s generosity,” says Institute Director and Chairman of the UCLA Department of Ophthalmology, **Bartly J. Mondino, MD**.

During his lifetime, Dr. Apt initiated his financial commitment toward the Institute when he established the Leonard Apt Endowed Fellowship in Pediatric Ophthalmology in 2002 and the Leonard Apt Endowed Chair in Pediatric Ophthalmology in 2004. The gifts helped advance efforts at Stein Eye to preserve and restore the vision of infants and children. Dr. Apt was also the first active faculty member to endow both a fellowship and a chair at UCLA.

In addition to being known for establishing the first division of pediatric ophthalmology at a U.S. medical school at UCLA and being one of the five founders of the Stein Eye Institute, Dr. Apt was also recognized as a pioneer in creating pediatric ophthalmology as a new subspecialty. In 1993, he took on the title of emeritus professor of ophthalmology and proudly carried that recognition until retiring in 2012.

Dr. Apt was actively involved at UCLA and widely recognized nationally and internationally, being awarded countless honors and memberships in numerous societies and associations. He received UCLA’s prestigious Dickson Emeritus Professorship Award in 2009, honoring outstanding research, teaching, and service to the University, and he was awarded the first Distinguished Achievement Award from the American Association of Pediatric Ophthalmology and Strabismus.

At Stein Eye, Dr. Apt was co-founder and co-director of the Center to Prevent Childhood Blindness, along with his colleague **Sherwin J. Isenberg, MD**, Laraine and David Gerber Chair in Ophthalmology. UCLA physicians and basic scientists, including **Drs. Gary N. Holland, Steven Nusinowitz, and Irwin Weiss**, sustain this extraordinary work to increase awareness and help treat pediatric blindness by collaborating on research, education, and patient-care programs. Significant emphasis at the Center is on the development and evaluation of ophthalmic medical and surgical options for children.

Notably, Dr. Apt and Dr. Isenberg made dramatic progress through the use of povidone-iodine solution, a medication that was pioneered at Stein Eye. Povidone-iodine now prevents thousands of cases of post-operative blindness in the United States and in newborns in Africa and Asia annually. Dr. Apt was also known for making other unique scientific contributions in the field of pediatric ophthalmology, such as “the Apt test,” a diagnostic test that distinguishes between fetal and maternal blood after birth.

Dr. Apt also volunteered his time serving as medical advisor and a member of the Board of Directors of the JSEI Affiliates, the volunteer arm of the Stein Eye Institute. As a tribute to his memory, the Affiliates dedicated the 10th Anniversary Pre-School Vision Screening Celebration book to Dr. Apt.

A native of Philadelphia, Pennsylvania, Dr. Apt attended the University of Pennsylvania and earned his medical degree at Jefferson Medical College in 1945. After completing his residency training at Harvard Medical School and the University of Cincinnati, Dr. Apt went on to become the first pediatric fellow at the National Institutes of Health. Dr. Apt died in February 2013.

“Not only did Dr. Leonard Apt found the Pediatric Ophthalmology and Strabismus Division at UCLA and lead it in its formative years, but the generosity of his estate will elevate fellowship training and research at the Stein Eye Institute to the highest levels of international prominence,” says **Joseph L. Demer, MD, PhD**, Arthur L. Rosenbaum, MD, Chair in Pediatric Ophthalmology and chief of the Division. “Dr. Apt’s philanthropy will create a living and enduring monument in the form of vast numbers of children who will enjoy the gift of sight in California and throughout the world.”



Through his research and clinical work, Dr. Leonard Apt (center)—shown with colleague Dr. Sherwin Isenberg (left)—dramatically decreased the frequency of blindness in children worldwide.



Louis and Annette Kaufman

Louis and Annette Kaufman: A Passion for Music and Art

The UCLA Stein Eye Institute received a generous gift of \$1.4 million from the estate of Louis and Annette Kaufman to support eye research. “This significant donation will provide a valuable resource for vision-science pursuits,” says **Bartly J. Mondino, MD**, chairman of the UCLA Department of Ophthalmology and director of the Stein Eye Institute.

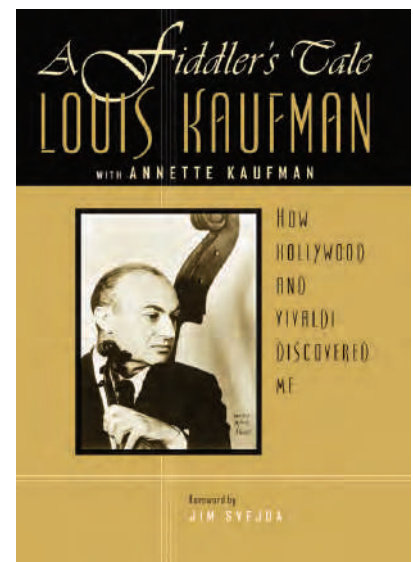
Louis Kaufman was a renowned American violinist whose interest in eye research was sparked by his own vision-altering experience. While touring in Greece, he suffered a detached retina and subsequently retired from playing music.

Mr. Kaufman was the most sought after violin soloist in Hollywood. He began studies with Franz Kneisel at the age of 13 at the Institute of Musical Art (now the Julliard School) in New York City. In his early career, he played chamber music with such noted musicians as Pablo Casals, Jascha Heifetz, and Efrem Zimbalist.

In addition to playing concert halls, Mr. Kaufman’s violin can be heard in as many as 500 films, ranging from *Casablanca* to *Gone with the Wind*. Mr. Kaufman is believed to be the most recorded violinist in history as concertmaster or violin soloist and was the first to record *The Four Seasons* by Italian composer Antonio Vivaldi. Mr. Kaufman’s 1947 recording of the four violin concerti was inducted into the Grammy Hall of Fame in 2002, and his papers are at the Library of Congress. Mr. Kaufman also helped to reintroduce the Baroque concertos of Vivaldi to modern audiences, bringing the composer’s work to its current worldwide popularity. Mr. Kaufman died in 1994 at the age of 89.

Annette Kaufman was a pianist who met her husband while studying music at the Institute of Musical Art. Married in 1933, the Kaufmans moved to Los Angeles the following year. A devoted wife, Annette completed her husband’s autobiography, *A Fiddler’s Tale: How Hollywood and Vivaldi Discovered Me*, which was published in 2003. In a feature article discussing the book about Louis Kaufman, The Film Music Society describes Mrs. Kaufman as: “A tireless supporter of his work and his legacy, she traveled the world to talk about him and to share their mutual passion for 20th-century art.” According to the article, “Annette never played in the film studios. She was, however, her husband’s frequent piano accompanist at chamber-music concerts both in the U.S. and Europe.” Mrs. Kaufman died in Los Angeles in 2016 at the age of 101.

Avid art collectors, the Kaufmans donated many pieces to the National Gallery of Art, Syracuse University, and the Phillips Collection in Washington, D.C., ensuring that others could see their beauty. The Stein Eye Institute is grateful to the Kaufmans for leaving a legacy of sight to patients so that they too might be able to see.



Thank You

For more than 50 years, the Stein Eye Institute at UCLA has joined with devoted donors to carry forward our mission to preserve sight and restore vision. We are tremendously grateful for the commitment our supporters have provided for vital research, education, patient-care, and community-outreach pursuits. Such an investment has a powerful and positive impact on ophthalmology and related disciplines locally, nationally, and worldwide, for which we remain enduringly thankful.

Major Gifts \$25,000 and above:

Albert Sarnoff	The Karl Kirchgessner Foundation
Alcon Research Institute	The Mary Oakley Foundation, Inc.
Bert O. Levy	The Simms/Mann Family Foundation
Bradley R. Straatsma, MD, JD	The Vision of Children Foundation
BrightFocus Foundation	Thomas C. Hays Trust
Bruce Ford and Anne Smith Bundy Foundation	VHL Alliance
Carol and Timothy W. Hannemann	Wilbur May Foundation
Fairchild-Martindale Foundation	William & Margaret Fern Holmes Family Foundation
Hess Foundation, Inc.	
Hongbin Peng	
J. Bronwyn Bateman, MD	
Jean Stein	
Jerome and Joan Snyder	
Jules and Doris Stein UCLA Support Group	
Katrina vanden Heuvel	
Knights Templar Eye Foundation, Inc.	
Lavery Foundation	
Leonard Apt Trust	
Louis and Annette Kaufman Family Trust	
Nancy and Allen Kramer	
Research to Prevent Blindness, Inc.	
Ruth and George E. Moss	
The Carl and Roberta Deutsch Foundation	
The Frank D. Hintze Trust	

The following individuals were honored with a tribute gift this past year:

In Honor of:

Dr. Anthony C. Arnold
Dr. John D. Bartlett
Carole Berman
Dr. Joseph Caprioli
Norma Castro
Dr. Joseph L. Demer
Dr. Sophie X. Deng
Dr. Uday Devgan
Dr. David R. Fett
Sabrina Fett
Dr. Robert A. Goldberg
Steve Goldberg
Dr. Michael B. Gorin
Dr. Jean-Pierre Hubschman
Alexandra Jaffe
Dr. Allan E. Kreiger
Antoinette Kruger
Theresa Kruger
Dr. Mark Landig
Dr. Kevin M. Miller
Dr. Bartly J. Mondino
Annette Renwick
Tania Rivas
Miguel Rodriguez
Sarah Rotella
Dr. Bradley R. Straatsma
Reva Tavelman's great-grandchild
Winslow E. Uebel
Maria Vega

In Memory of:

George Andrews
Maude Andrews
Warren Allen Appel
Duane Carter
Jerold L. Dougal
Richard Elander
Shirley Feldman
Peggy L. Giambrocco
Irma Goffi
Ruth Greenberg
Dr. Herbert J. Grossman
Ione J. Kanne
Mary B. Larson
Marlin Lea
Michael J. Marienthal
Lou Rosenberg
Stanley K. Rothstein
Ruth Straatsma
Frances White

**Stein Eye Institute
Endowed Chairs
Supporting Department of
Ophthalmology Faculty**

**The Ahmanson Chair in
Ophthalmology**

Established in 2006 by The Ahmanson Foundation as an administrative chair for the Retina Division Chief to further research, education, and clinical care programs.

**Steven D. Schwartz, MD
2007–Present**

**Leonard Apt Endowed Chair in
Pediatric Ophthalmology**

Established in 2004 by Professor Emeritus of Ophthalmology and Founding Director of the Division of Pediatric Ophthalmology and Strabismus, Dr. Leonard Apt, with a gift from the trust of Frederic G. Rappaport, Dr. Apt's nephew.

**Joseph L. Demer, MD, PhD
2005–2015**

**Karen and Frank Dabby Endowed
Chair in Ophthalmology**

Established in 2007 by Dr. and Mrs. Dabby as a term chair to support the activities of a distinguished faculty member in the area of orbital disease.

**Robert Alan Goldberg, MD
2008–Present**

**Charles Kenneth Feldman Chair in
Ophthalmology**

Established in 1982 by various donors in memory of Charles Kenneth Feldman, an entertainment industry executive.

**Robert D. Yee, MD
Professor 1984–1987**

**Hillel Lewis, MD
Scholar 1989–1993**

**Gabriel H. Travis, MD
2001–Present**

Laraine and David Gerber Chair in Ophthalmology

Established in 1998 as a term chair by Mr. and Mrs. Gerber and, with an additional pledge, converted to a permanent-appointment chair in 2009.

Joseph L. Demer, MD, PhD
2000–2004

Sherwin J. Isenberg, MD
2004–Present

Dolly Green Chair of Ophthalmology

Established in 1980 by Ms. Dorothy (Dolly) Green.

Dean Bok, PhD
1984–Present

Ernest G. Herman Chair in Ophthalmology

Established in 2008 by Mr. Ernest G. Herman to support a vision scientist or a clinician-investigator.

Xian-Jie Yang, PhD
2012–Present

Karl Kirchgessner Foundation Chair in Vision Science

Established in 2001 as a term chair by a colleague of Dr. Jules Stein to promote basic-science research initiatives.

Debora B. Farber, PhD, DPhhc
2001–Present

Kolokotronis Chair in Ophthalmology

Established in 2004 by Wendy and Theo Kolokotronis to support the teaching and research of a cataract surgeon and scientist.

Kevin M. Miller, MD
2005–Present

Grace and Walter Lantz Endowed Chair in Ophthalmology

Established in 1991 as a term chair by Mr. and Mrs. Lantz and, with an additional pledge, it was converted to a permanent-appointment chair in 2010.

J. Bronwyn Bateman, MD
Grace and Walter Lantz Scholar
1993–1995

Sherwin J. Isenberg, MD
Grace and Walter Lantz Scholar
1993–1995
Professor 1996–2004

Joseph L. Demer, MD, PhD
Professor 2004–2005

Walton Li Chair in Cornea and Uveitis

Established in 2013 by Walton W. Li, MD, as an administrative chair for the Cornea and Uveitis Division to further research and teaching activities.

Anthony J. Aldave, MD
2014–Present

David May II Chair in Ophthalmology

Established in 1998 as a term chair by the family of Mr. David May II, a founding member of the Institute's Board of Trustees, to perpetuate, in memoriam, Mr. May's association with the Stein Eye Institute; after an additional pledge from the Wilbur May Foundation, it was converted to a permanent-appointment chair in 2009.

Gary N. Holland, MD
1999–2004

Joseph Caprioli, MD
2004–Present

Mary Oakley Foundation Chair in Neurodegenerative Diseases

Established in 2013 by The Mary Oakley Foundation to support neurodegenerative diseases.

Oppenheimer Brothers Chair

Established in 2002 as a term chair by the Oppenheimer Brothers Foundation.

Joseph Horwitz, PhD
2003–Present

Harold and Pauline Price Chair in Ophthalmology

Established in 2000 by the Louis and Harold Price Foundation and, with an additional pledge, it was converted to a permanent-appointment chair in 2006.

Michael B. Gorin, MD, PhD
2006–Present

Arthur L. Rosenbaum, MD, Chair in Pediatric Ophthalmology

Established in 2007 by Mr. and Mrs. Gottlieb as an administrative chair for the Division of Pediatric Ophthalmology and Strabismus in honor of the late Dr. Arthur L. Rosenbaum. The chair was originally named the Brindell and Milton Gottlieb Chair in Pediatric Ophthalmology.

Arthur L. Rosenbaum, MD
2008–June 2010

Joseph L. Demer, MD, PhD
2015–Present

Jack H. Skirball Chair in Ocular Inflammatory Diseases

Initiated in 2008 by The Skirball Foundation in honor of Jack H. Skirball's long-standing friendship with Dr. Jules Stein and Lew Wasserman.

Gary N. Holland, MD
2009–Present

Smotrich Family Optometric Clinician-Scientist Chair

Established in 2016 to support an optometric clinician-scientist at the UCLA Stein Eye Institute and will fund the appointee's education and research programs.

Jerome and Joan Snyder Chair in Ophthalmology

Established in 2008 by Mr. and Mrs. Snyder to support the activities of a distinguished faculty member who directs the ophthalmology residency program, ensuring that UCLA's accredited program continues to offer rigorous and comprehensive instruction for individuals of the highest caliber.

Anthony C. Arnold, MD
2008–Present

Joan and Jerome Snyder Chair in Cornea Diseases

Established in 2013 by Mr. and Mrs. Snyder to support the activities of a distinguished faculty member in the area of corneal diseases and research.

The Fran and Ray Stark Foundation Chair in Ophthalmology

Established in 1992 as a term chair by the Fran and Ray Stark Foundation, and with an additional commitment, it was converted to a permanent-appointment chair in 2009.

Joseph Caprioli, MD
1997–2004

Anne L. Coleman, MD, PhD
2004–Present

Jules Stein Chair in Ophthalmology

Established in 1982 as a memorial tribute to Dr. Jules Stein by his many friends, with the leadership of Mr. Samuel Goldwyn, Jr.

Wayne L. Hubbell, PhD
1983–Present

Bradley R. Straatsma, MD, Endowed Chair in Ophthalmology

Established in 1994 to honor founding director of the Stein Eye Institute, Bradley R. Straatsma, MD, JD.

Bartly J. Mondino, MD
2000–Present

Vernon O. Underwood Family Chair in Ophthalmology

Established in 1995 as a term chair by Mrs. Adrienne Underwood Pingree in memory of her late husband, Mr. Vernon O. Underwood.

John R. Heckenlively, MD
1997–2004

Gary N. Holland, MD
2004–2009

Lynn K. Gordon, MD, PhD
2012–Present

The Wasserman Professor of Ophthalmology

Established in 1977 by Edie and Lew Wasserman to honor Dr. Jules Stein.

Manfred Spitznas, MD
1979–1981

Bartly J. Mondino, MD
Scholar 1984–1988
Professor 1988–2000

Ben J. Glasgow, MD
2003–Present

Doheny Eye Institute Endowed Chairs Supporting Department of Ophthalmology Faculty

Stephen J. Ryan Arnold and Mabel Beckman Foundation Chair
SriniVas R. Sadda, MD
2015–Present

Rupert and Gertrude Steiger Vision Research Chair
Brian A. Francis, MD, MS
2015–Present

Flora L. Thornton Chair in Vision Research
Alfredo A. Saddun, MD, PhD
2014–Present

A. Ray Irvine, Jr. MD, Chair in Clinical Ophthalmology
John A. Irvine, MD
2014–Present

Mary D. Allen Chair in Vision Research

Deming Sun, MD
2015–Present

Gavin S. Herbert Endowed Chair for Macular Degeneration

Unassigned

Stein Eye Institute Fellowship Funds and Endowments

Rosalind W. Alcott Fellowship

Established in 1978 by the Rosalind W. Alcott Charitable Remainder Trust for the training of outstanding postdoctoral fellows.

Laura A. Vickers, MD, MA
2016–2017

Leonard Apt Endowed Fellowship in Pediatric Ophthalmology

Established in 2002 by founding chief of the Pediatric Ophthalmology and Strabismus Division, Leonard Apt, MD, to support outstanding clinical fellows in the field of pediatric ophthalmology and strabismus.

Rui Zhang, MD
2016–2017

Leonard Apt, MD, Pediatric Fellowship Fund

Established in 2015 by the trust of Leonard Apt, MD, founding chief of the Pediatric Ophthalmology and Strabismus Division, to support pediatric ophthalmology fellowships.

Thelma and William Brand Director's Fund

Established in 2004 with a trust from Mr. William F. Brand to benefit worthy students at the Stein Eye Institute.

Cooperman Fellowship Fund

Established in 1988 by the Coopermans to support eye research and education, with emphasis on clinical ophthalmology.

Melinda Y. Chang, MD
2016–2017

David and Randi Fett Orbital and Ophthalmic Plastic Surgery Fellowship Endowment

Established in 2013 by Dr. David R. Fett and Ms. Randi Levine to support fellows in the Orbital and Ophthalmic Plastic Surgery Division.

Sathyadeepak Ramesh, MD
2016–2017

Klara Spinks Fleming Fellowship Fund

Established in 1985 by Klara Spinks Fleming to support cataract research.

David T. Truong, MD
2016–2017

Frances Howard Goldwyn Fellowship

Established in 1977 by Mr. Samuel Goldwyn, Jr., with gifts from Mrs. Goldwyn's estate and Dr. and Mrs. Jules Stein.

Bora Chae, MD
2016–2017

Elsa and Louis Kelton Fellowship

Endowed by the Keltons in 1982 to support postdoctoral research and training.

Aaron Nagiel, MD, PhD
2015–2016

An Huynh, MD
2016–2017

Jerome Comet Klein, MD, Fellowship Fund

Established in 2007 by the Irving & Estelle Levy Foundation to provide fellowship and lecture support in the areas of orbital and ophthalmic plastic surgery.

Wenjing Liu, MD
2016–2017

Bert Levy Research Fellowship Fund

Established in 1995 by Mr. Bert Levy to enhance the educational opportunities of vision science scholars and advance research in neuro-ophthalmology.

David May II Fellowship Fund

Established in 1992 by the family of Mr. David May II to support advanced study and research in ophthalmology and vision science.

Sanket U. Shah, MD
2016–2017

Wilbur D. May Fellowship

Established in 2013 by the May family as a tribute to Mr. Wilbur D. May, the beloved uncle of Mr. David May II.

John and Theiline McCone Fellowship

Established in 1989 by the McCones to support and enhance education programs and fellowship training in macular disease.

Robert Arthur Lalane III, MD
2016–2017

Christian J. Sanfilippo, MD
2016–2017

Abe Meyer Memorial Fellowship Fund

Established in 1969 by various donors to support clinical fellows at the Institute.

David T. Truong, MD
2016–2017

Adelaide Stein Miller Research Fellowship

Established in 1977 by Mr. Charles Miller as a tribute to his wife, Adelaide Stein Miller, Dr. Jules Stein's sister.

Nathaniel C. Sears, MD
2016–2017

The Harold and Pauline Price Fellowship

Established in 1987 by the Louis and Harold Price Foundation to support research and education in ophthalmology and vision care.

Laura A. Vickers, MD, MA
2016–2017

Frederic G. Rappaport Endowed Fellowship in Retina/Oncology

Established in 2004 by Mrs. Jeanne A. Rappaport as a memorial to her son Frederic.

Dr. Jack Rubin Memorial Fellowship

Established in 1987 by the family of Dr. Jack Rubin to support postdoctoral fellows.

Nathaniel Sears, MD
2016–2017

Sanford and Erna Schulhofer Fellowship Fund

Established in 1986 by Mr. Sanford Schulhofer to support postdoctoral research and training in vision science.

Bora Chae, MD
2016–2017

The Mae and Lee Sherman Fellowship Fund

Established in 1981 by the Sherman family to support postdoctoral fellows.

Andrew Salem, MD
2015–2016

Saba Al-Hashima, MD
2016–2017

Audrey and Jack Skirball Ocular Inflammatory Disease Fellowship

Established in 2011 by The Skirball Foundation to support the training of fellows specializing in ocular inflammatory disease.

Jules Stein Research Fellowship

Established in 1982 by various donors to honor the memory of Charles Kenneth Feldman.

Aaron Nagiel, MD, PhD
2016–2017

Endowments for Research, Education, and Patient Care

Albert Sarnoff Endowed Cataract Fund

Amalia Simon Roth Endowment

Anne H. West Estate Fund

Anthony Eannelli Fund

Arna Saphier Macular Degeneration Fund

Arthur Spitzer Fund

Audrey Hayden-Gradle Trust

Barbara P. Taylor Fund

Bradley R. Straatsma Research Fund

Card Family Research Fund

Chesley Jack Mills Trust

Daniel B. Whipple Fund

Dr. William F. Stein and Esther Elizabeth Stein Memorial Fund

Edward and Hannah Carter Fund

Elsie B. Ballantyne Regents Fund

Elsie B. Ballantyne UCLA Foundation Fund

Emily G. Plumb Estate and Trust

Emma B. Gillespie Fund

Endowment for Children with Uveitis

Esther Shandler Research Fund

Gerald Oppenheimer Family Foundation Center for the Prevention of Eye Disease Endowment Fund

Harold B. and Bernice L. Belfer Fund

Herb Ritts, Jr., Memorial Vision Fund

Herman King Fund

Hintze Glaucoma Research Fund

J. Richard Armstrong and Ardis Armstrong Fund

Jerome T. Pearlman, MD, Fund

John and Theiline McCone Macular Disease Research Fund

JSEI Maintenance Fund

Katherine L. Gardner Research Fund

Louis and Annette Kaufman Fund

Maggi Kelly Vision Fund

Marie and Jerry Hornstein Family Endowed Macular Degeneration Research Fund

Michael Huffington Ophthalmology Scholarship Fund

Pat and Joe Yzurdiaga Endowed Cataract Fund

Patricia and Joseph Yzurdiaga Endowed Vision Science Research Fund

Patricia Pearl Morrison Research Fund

Paul J. Vicari Endowed Cataract Research Fund

Raymond and Ruth Stotter Vision Science Research Fund

Richard B. Shapiro Vision Fund

Sara Kolb Memorial Fund

Stella F. Joseph Fund

The Annenberg Foundation Fund

The Karl Kirchgessner Foundation Ophthalmology Endowment Fund

The Leonard Apt, MD, Pediatric EyeSTAR Residency Training Fund

The Leonard Apt, MD, Pediatric Ophthalmology Fund

The Skirball Foundation Fund

UCLA Center for Eye Epidemiology

Uncle Claude Fund

Virginia Burns Oppenheimer Endowment Fund

Wickham Retina Research Fund

William R. Payden Fund for Glaucoma Research

William, Richard, & Roger Meyer Fund



The legacy of Dr. and Mrs. Jules Stein arises from their role in the 20th century as visionaries. Through brilliance and beneficence, they created a multitude of programs aimed specifically at one goal: preserving and restoring eyesight. They approached this task dauntlessly, integrating the worlds of business, medicine, and philanthropy in such a way as to enhance each and leave in trust the promise of limitless accomplishment in the advancement of eye research and treatment. The Stein Eye Institute was established as a result of their philanthropy.



Jules Stein

Jules Stein is the foremost benefactor in the world history of vision science and blindness prevention. He combined his love for music and medicine with a unique talent for analysis and organization to produce a lifetime of celebrated achievements as musician, physician, business leader, and humanitarian.



Born in South Bend, Indiana, in 1896, Jules Stein received a bachelor of philosophy degree from the University of Chicago at age 18 followed by a medical degree from Rush Medical College. After completing postgraduate studies at the University of Vienna and Chicago's Cook County Hospital, he began medical practice and was certified by the American Board of Ophthalmology.

A musician from an early age, he financed his education by playing in and leading his own band. As his reputation increased, he began booking other musicians for professional engagements, and in 1924, founded Music Corporation of America (MCA). Shortly thereafter, he gave up the practice of medicine to concentrate on this enterprise. Within 10 years, MCA represented most of the great name bands and corporate activities began to extend to representation of film stars, directors, writers, and musical artists. MCA entered the promising new field of television at its inception, eventually acquiring the Universal City property, Universal Pictures, and other enterprises to become pre-eminent in the entertainment industry.

Throughout his phenomenally successful career, Jules Stein maintained a strong interest and emotional investment in medicine, particularly his own field of ophthalmology. In the late 1950s, urged by his wife, Doris, he chose to direct his considerable talents to blindness prevention. The result was a concert of ideas and achievements that encompassed philanthropy, government, and academic medicine.

By his efforts, Research to Prevent Blindness was created, now recognized as the world's leading voluntary organization in support of studies of the eye and its diseases. Jules Stein was largely responsible for the passage of legislation to establish the National Eye Institute as a separate entity in the National Institutes of Health. Under his leadership, the Stein Eye Institute was founded as a multidisciplinary center for vision science. Since its establishment, the Institute has become internationally identified as the focus for coordinated programs of research in the sciences

related to vision, ophthalmic education, and the care of patients with eye disease. Jules Stein died in 1981, leaving a legacy of hope to the world. Through his accomplishments and philanthropy, he created ever-replenishing resources for eye research and the means to preserve and restore sight for future generations.

Doris Stein

Doris Stein's purposeful, yet richly varied life, earned the respect and affection of the many people who benefited from her humanitarianism. Inspiring partner of her husband for more than half a century, Doris Stein shared with him the accomplishments of his philanthropic endeavors and guided his interests in ophthalmology, beginning with a visit to the New York Lighthouse for the Blind in the late 1950s. Deeply moved, Doris Stein urged her husband to "do something!" From that passionate beginning came a broad base of programs that catalyzed eye research.

Doris Stein was a major force in this vision renaissance. She served as an officer and director of Research to Prevent



Blindness, personally leading the appeal to establish more resources for investigations into eye diseases. She suggested that Jules Stein assume the principal role in the creation of an eye institute at UCLA, and her unflagging enthusiasm nurtured the Institute's development as a unique provider of every facet of vision research and patient care. Serving as Trustee, she focused special attention on Institute initiatives to combat blindness throughout the world. She devoted her last days, until her death in 1984, to the development of an expansion and companion building for eye

research. In 1989, dedication ceremonies were held for the Doris Stein Eye Research Center.

With grace, vision, and meaningful action, Doris Stein enhanced the lives of all privileged to know her, stimulated a cascade of progress in eye research, co-founded the Institute with its boundless scientific potential, and extended the miracle of sight to untold numbers of people.

Board of Trustees

The Stein Eye Institute Board of Trustees was established in 1977 to ensure the Institute's orderly growth and development. The Board meets regularly during the year, with each Trustee providing his/her unique counsel. Collectively, their invaluable contributions have included fiscal planning for the Institute, adoption of measures to facilitate recruitment of the world's finest vision scientists, allocation of funds for the purchase of vision research equipment, and recommendations for facilities expansion programs.

Current Members

Bartly J. Mondino, MD

Director
Stein Eye Institute
1994–present



Nelson C. Rising, Esq.

Chairman and
Chief Executive Officer
Rising Realty Partners
2011–present



Edward A. Landry

Partner
Musick Peeler, Los Angeles Office
2016–present



Katrina vanden Heuvel

Publisher and Editor
The Nation
1984–present



Ronald L. Olson, Esq.

Partner
Munger, Tolles & Olson
1995–present



Casey Wasserman

President and
Chief Executive Officer
The Wasserman Foundation
1998–present



Gerald H. Oppenheimer

President
Gerald Oppenheimer
Family Foundation
President
Systems Design Associates
1992–present



Observer

Marissa Goldberg

Executive Director and
Chief Financial Officer
Doheny Eye Institute
2015–present



The Executive Committee

The Executive Committee of the Stein Eye Institute and UCLA Department of Ophthalmology meets regularly during the year, with each member providing their unique expertise. The Executive Committee ensures the orderly growth and development of the Institute and Department. It is involved in fiscal planning for the Institute, space, recruitments, program development, and resolution of interdivisional issues.

Bartly J. Mondino, MD

Director, Stein Eye Institute
Chairman, UCLA Department of Ophthalmology
Affiliation Chairman, Doheny Eye Institute

Alapakkam P. Sampath, PhD

Associate Director, Stein Eye Institute

Anne L. Coleman, MD, PhD

Vice-Chair, UCLA Department of Ophthalmology

Jonathan D. Smith

Chief Administrative Officer, Stein Eye Institute

SriniVas R. Sadda, MD

President and Chief Scientific Officer
Doheny Eye Institute

Alfredo A. Sadun, MD, PhD

Vice Chairman
Doheny Eye Center UCLA





The Stein Eye Institute at UCLA is a vision-science campus dedicated to the preservation and restoration of vision through its global programs and innovative research, quality patient care, and multidisciplinary, integrative education, all with community outreach.

Faculty



Anthony J. Aldave, MD

Walton Li Chair in Cornea and Uveitis
Professor of Ophthalmology
Chief of the Cornea and Uveitis Division
Member of the Stein Eye Institute

Discovering the Genetic Basis of the Corneal Dystrophies

The Cornea Genetics Laboratory, under Dr. Aldave's direction, is involved in identifying and elucidating the genetic basis of inherited corneal disorders, such as posterior polymorphous and Lisch corneal dystrophies.



Public Service

Associate Examiner, American Board of Ophthalmology

Chair, American Academy of Ophthalmology Practicing Ophthalmologists Curriculum, Cornea and External Disease Panel

Chair, Cornea Society Scientific Program Committee

Member, Cornea Society Board of Directors

Member, Eye Bank Association of America Medical Advisory Board

Member, Editorial Board, *Cornea*

Member, Editorial Board, *Molecular Vision*

Ad hoc member, NIH, Neurological, Aging and Musculoskeletal Epidemiology (NAME) Study Section, 2016/10 NAME meeting

Ad hoc member, NIH, Genetics of Health and Disease (GHD) Study Section, 2017/05 GHD meeting

Reviewer for many scientific journals

Research Grants

National Eye Institute: Identification and Characterization of the Genetic Basis of PPCD, 12/1/12–11/30/17

JAEB Center for Health Research: Effect of the Corneal Preservation Time on Long-Term Graft Success (CPTS), 3/6/12–8/31/17

National Eye Institute (subaward from Cedars-Sinai Medical Center): Genetic Factors in Keratoconus, 12/1/14–2/28/18

Department of Defense (subaward from Massachusetts Eye and Ear Infirmary): Vision Restoration with a Collagen Crosslinked Boston Keratoprosthesis Unit, 9/1/15–8/31/17

Anthony C. Arnold, MD

Jerome and Joan Snyder Chair in Ophthalmology

Professor of Clinical Ophthalmology

Chief of the Neuro-Ophthalmology Division

Director of the UCLA Optic Neuropathy Center

Member of the Stein Eye Institute

Ischemic and Inflammatory Diseases of the Optic Nerve

Dr. Arnold directs a neuro-ophthalmology research program concerned with diseases of the optic nerve. The overall goals of the program are the development of new techniques for imaging the optic nerve and its blood supply; an improved understanding and classification of ischemic and inflammatory optic nerve diseases; and the development and evaluation of new therapeutic modalities for these diseases.

Dr. Arnold was a principal investigator in the National Eye Institute-sponsored clinical study of optic nerve sheath decompression surgery for nonarteritic anterior ischemic optic neuropathy, and he was on the study's Visual Field Data Analysis Committee. He is a primary advisor for an international multi-center study of risk factors for nonarteritic anterior ischemic optic neuropathy.

Ongoing additional research studies include clinical characteristics of ischemic optic neuropathy in young patients; improved differentiation of arteritic from nonarteritic anterior ischemic optic neuropathy; identification of ischemic aspects of other rare optic neuropathies, such as diabetic papillopathy, uremic optic neuropathy, and chemotherapy-induced optic neuropathy after bone marrow transplantation; and classification of unusual optic neuropathies, such as ethambutol-induced optic neuropathy and focal congenital optic nerve hypoplasia. A study of differentiation of optic disc drusen from papilledema has recently been completed. A major thesis entitled, The Spectrum of Optic Disc Ischemia, has been submitted to the American Ophthalmological Society.

Honors

Received the S. Rodman Prize at the UCLA Stein Eye Institute Clinical and Research Seminar on June 9, 2017, in Los Angeles, California.

Public Service

Faculty, Stanford/Bay Area
Basic Science Course in
Neuro-Ophthalmology

Faculty, Lancaster Course in
Ophthalmology, Colby College

Board Director, American
Board of Ophthalmology

Chair, ACGME Residency Review
Committee for Ophthalmology

Chair, ACGME Milestones Committee
for Ophthalmology

Reviewer for many scientific journals



Gavin G. Bahadur, MD

Health Sciences Assistant Clinical Professor of Ophthalmology

Public Service

Volunteer, Care Harbor Los Angeles

Informatics and Health Care Policy

Dr. Bahadur is a full-time ophthalmologist at the Stein Eye Center–Santa Monica, specializing in comprehensive ophthalmology, including cataract, pterygium, and glaucoma surgery.

In addition to his clinical duties, Dr. Bahadur teaches medical students during their ophthalmology surgical subspecialties rotation. His research interests include medical informatics and health care policy.



Richard S. Baker, MD

Associate Professor of Ophthalmology

Associate Director, Stein Eye Institute Center for Community Outreach and Policy,
UCLA Center for Eye Epidemiology

Executive Director, Center for Health Services Research
Charles R. Drew University of Medicine and Science

Chairman, Department of Ophthalmology
Charles R. Drew University of Medicine and Science

Member of the Stein Eye Institute

Vice Dean for Medical Education, Wayne State University School of Medicine

Ophthalmic Epidemiology and Health Services Research

Dr. Baker's primary areas of research interest are in the fields of ophthalmic epidemiology, health services research, and health information technology, including telemedicine. Current projects in ophthalmic epidemiology include statistical analysis of national and statewide databases to produce definitive population-based estimates of the distribution and the determinants of major ophthalmic diseases and their treatments.

As executive director of the Charles R. Drew Center for Health Services Research, Dr. Baker works closely with collaborators at the Stein Eye Institute and across UCLA on multiple projects related to improving access to care, optimizing the quality of care, and eliminating health disparities in diverse and underserved populations.

Public Service

Trustee, California Medical Association

Chairman, Council for Scientific and Clinical Affairs,
California Medical Association

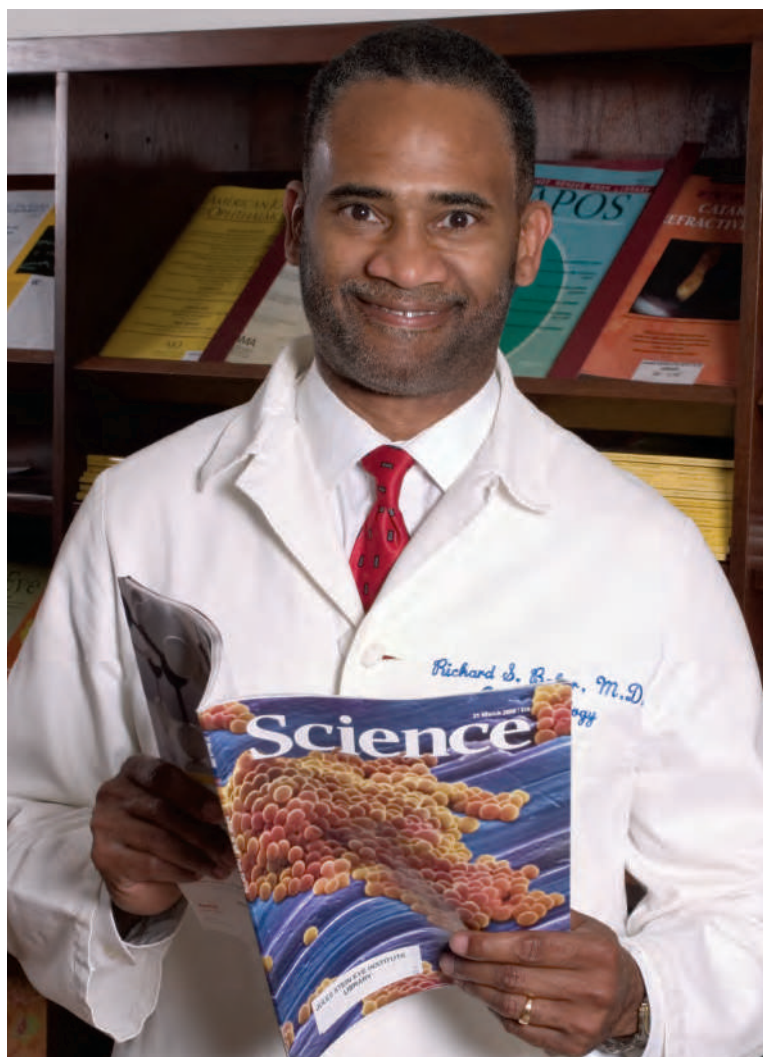
Secretary, Board of Trustees,
Los Angeles County
Medical Association

Chairman, African American Physician
Advisory Committee, Los Angeles
County Medical Association

Secretary, Board of Trustees,
Latino Physicians of California

Reviewer for multiple National
Institutes of Health and Agency for
Healthcare Research and Quality
Special Emphasis Panels

Reviewer for many scientific journals



John D. Bartlett, MD

Health Sciences Assistant Clinical Professor of Ophthalmology
Member of the Stein Eye Institute

Cataract and Refractive Surgery

Dr. Bartlett has an ongoing clinical interest in cataract surgery, particularly refractive cataract surgery where the goal is to improve the focusing of the eyes and reduce dependence on glasses, while restoring vision potential. He is involved with teaching these surgical techniques to the Stein Eye residents, training the next generation of eye surgeons to deal with challenging cases.

Clinical Informatics

As one of UCLA's physician informaticists, Dr. Bartlett is involved in the ongoing implementation and optimization of electronic health records (EHRs). UCLA physician informaticists engage in all aspects of understanding and promoting effective organization, analysis, management, and use of clinical information. Dr. Bartlett is interested in using EHRs to reach the "Triple Aim" of improved patient care and satisfaction, improved population health, and decreased cost of health care.

Public Service

Ambulatory Practice Care Associate,
UCLA Health, Faculty Practice Group

Member, CareConnect
Ambulatory Operations Advisory Group,
UCLA Health

Quality Officer, Stein Eye Institute

Interim Medical Director,
University Ophthalmology Associates,
Stein Eye Institute



Suraj P. Bhat, PhD

Professor of Ophthalmology

Member of the Molecular Biology Institute

Member of the Stein Eye Institute

Molecular Biology of Vision

Dr. Bhat's laboratory studies the regulation of gene activity during differentiation and development of the vertebrate eye. This involves isolation and characterization of genes and gene products, identification of the regulatory elements and factors, and elucidation of their mechanisms employing both in vivo and in vitro paradigms with manipulated gene sequences.

Two areas of research currently under investigation are focused on gaining deeper insight into molecular mechanisms that developmentally predispose the eye to visual impairment through ocular lens pathologies such as cataracts, and through retinal diseases including age-related macular degeneration (AMD).

One area of attention is the study of the developmental and tissue-specific control of the α B-crystallin gene and its involvement in cataractogenesis. Another is the elucidation of the physiological function of the α B-crystallin protein in the ocular lens, in the neuroretina and retinal pigment epithelium (RPE), and in the brain. Technically this work involves gene manipulations and the study of their consequences on the phenotype, both in vitro (cultured cells) as well as in vivo (transgenic animals).

Studies on the regulation of the expression of the small heat-shock protein gene, α B-crystallin, are focused on heat-shock transcription factor 4 (HSF4), which Dr. Bhat's laboratory has reported to be the predominant heat-shock transcription factor of the developing lens, and its post-natal expression correlating with the most prevalent form of early childhood lamellar cataracts. Dr. Bhat's group has

generated mouse models of this cataract, thus enabling first-time investigation of this childhood pathology.

Studies on the function of the α B-crystallin protein in the lens and the RPE (in particular its relation to AMD) are focused on elucidating its "non-crystallin" function, which is relevant both in the transparent and nontransparent physiology. These investigations have led Dr. Bhat's laboratory to the discovery of the secretion of α B-crystallin from the RPE in lipoprotein vesicles known as exosomes, and to initiate studies on elucidation of intercellular communication (via exosomes) in the RPE, in health, and in disease.

Public Service

Member, Joint Working Group
INDO-US Collaboration in
Vision Research

Assessor, National Health and
Medical Research Council, Australia

Editor, *Molecular Vision*

Editorial Board Member,
Developmental Neuroscience

Editorial Board Member,
*International Journal of Biochemistry
and Molecular Biology*

Reviewer for many scientific journals

Research Grants

National Eye Institute: Childhood
Cataractogenesis: Heterogeneity of
Gene Expression, 1/1/15–12/31/18



Nicholas C. Brecha, PhD

Distinguished Professor of Neurobiology, Ophthalmology, and Medicine

Member of the Stein Eye Institute

Member of the Brain Research Institute

Member of CURE: Center for Digestive Diseases

Member of the California NanoSystems Institute

Public Service

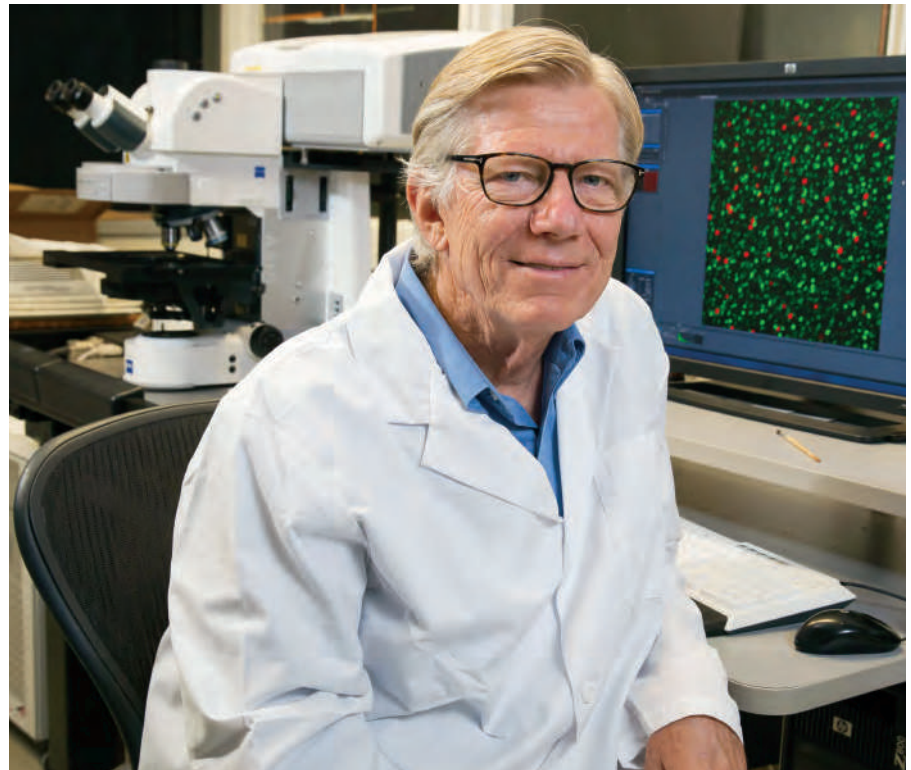
Reviewer for many scientific journals

Functional and Structural Organization of the Mammalian Retina

Dr. Brecha's research focuses on the elucidation of the structural and functional organization of the outer and inner retina for understanding visual information processing by the retina. Morphological studies are focused on defining the different cell types and their microcircuitry in the outer and inner retina. Neurochemical studies have investigated the action of the excitatory and inhibitory neurotransmitters and neuroactive peptides in these retinal microcircuits. Experimental work has clarified the functional role of neuropeptides in the inner retina and supports the current hypothesis that certain dopamine and neuropeptides are modulators of retinal neurons and circuitry that influence light and dark adaptation; they also influence retinal circuitry that mediate pupillary reflexes and eye movements.

Other experimental work has investigated the photoreceptor synaptic triad, a specialized synaptic complex that is the site of initial transfer of visual information from photoreceptors and is critically important for visual processing. Experimental studies are testing the idea that a gamma-Aminobutyric acid (GABA) mediated vesicular release underlies horizontal cell feedback and feed forward signaling, to cones and bipolar cells, respectively. The horizontal cell microcircuitry is critically important for both local

and global image processing, including the formation of visual receptive fields, blue-yellow color opponency, and ganglion cell gain. These investigations are fundamental steps in establishing the retina's functional organization and provide the basis for understanding the pathophysiology of retinal dysfunction concomitant with retinal disease and injury.



Joseph Caprioli, MD

David May II Chair in Ophthalmology

Professor of Ophthalmology

Chief of the Glaucoma Division

Member of the Stein Eye Institute

Causes and New Treatments for Glaucoma

Dr. Caprioli's long-term objective in his clinical and basic research is to identify those individuals at greatest risk for visual loss and to implement new treatment strategies to prevent blindness. Currently, the only tool that physicians have to treat glaucoma is reduction of intraocular pressure. This treatment does not prevent visual loss in a substantial proportion of patients whose damage progresses quickly. The development of effective neuroprotective avenues of treatment will be a hallmark advance to eliminate blindness from this disease.

Evaluation of Methods to Measure Rates of Glaucomatous Optic Nerve Damage

Accurate assessment of optic nerve and nerve fiber layer is important to the early detection and timely treatment of glaucoma. Studies are underway to develop novel structural measures of the optic nerve and nerve fiber layer, which are sensitive and specific for early and progressive glaucomatous optic nerve damage. The goals of this work include identifying clinically implementable techniques to measure the rate of progressive damage. It is unlikely that a single structural or functional technique will be best throughout the course of the disease, and different methods will need to be applied at different stages to best measure disease progression.

Molecular Mechanisms of Retinal Ganglion Cell Damage and Neuroprotective Approaches to Treatment

Basic science research under Dr. Caprioli's direction involves the mechanisms of glaucomatous optic nerve damage. The stress protein response in a glaucoma model is being intensively studied. An important goal in this research is to identify neuroprotective drugs that prevent the death of retinal ganglion cells in mammalian models of glaucoma, and to apply these findings to clinical trials of human glaucoma.

Public Service

Chair, American Academy of Ophthalmology, Committee on Practice Improvement

Clinical Volunteer, Venice Family Clinic

Editorial Board Member, *American Journal of Ophthalmology*, *Investigative Ophthalmology and Visual Science*, and *Journal of Glaucoma*

Reviewer for many scientific journals

Research Grants

Allergan Pharmaceutical Corp: The Efficacy and Safety of Bimatoprost Sr in Patients with Open-Angle Glaucoma or Ocular Hypertension, 4/22/15–1/31/2019

Simms-Mann Family Foundation: Clinical Research Program in Glaucoma, 7/1/14–6/30/18

Innfocus Inc.: A Randomized Study Comparing the Safety and Efficacy of the Innfocus Microshunt Glaucoma Drainage System to Standard Trabeculectomy in Subjects with Primary Open Angle Glaucoma, 2/4/16–2/4/18



Richard Casey, MD

Health Sciences Clinical Professor of Ophthalmology
Associate Member of the Stein Eye Institute

Public Service

President, Los Angeles Ophthalmology
Medical Group, Inc.

Cornea External Disease

Dr. Casey's research is focused on understanding the causes of a variety of ocular surface and corneal disorders, with the intended goal to develop or improve treatments for patients with these disorders. He is currently collaborating with both the Retina and Ophthalmic Pathology Divisions in separate clinical research projects. One study evaluates the ocular surface of patients undergoing corneal transplantation surgery to establish previously undescribed clinical-pathologic correlation with tear insufficiency and corneal epithelial abnormalities. A major outcome is to improve the success of corneal transplantation in high-risk patients with the comorbid conditions of tear insufficiency. He is also working with the Retina Division to determine which variables improve corneal transplant survival when corneal transplantation is combined with vitreo-retinal surgery.

Public Health Services/ Health Access

Dr. Casey has elected to dedicate a significant portion of his professional career to improving access to health care in specific underserved communities of Los Angeles. He has focused on assessing unmet needs in vision health to develop innovative strategies that address these deficits. He established the Los Angeles Ophthalmology Medical Group in 2001, which provides comprehensive eye care services in South Los Angeles.



Anne L. Coleman, MD, PhD

The Fran and Ray Stark Foundation Chair in Ophthalmology

Professor of Ophthalmology

Professor of Epidemiology

Director of the Stein Eye Institute Centers for Community Outreach and Policy, Eye Epidemiology, and the UCLA Mobile Eye Clinic

Vice Chairman of Academic Affairs, UCLA Department of Ophthalmology

Member of the Stein Eye Institute

Glaucoma, Cataract, and Age-Related Macular Degeneration

Dr. Coleman's research is directed toward the diagnosis, treatment, and societal impact of glaucoma, cataracts, and age-related macular degeneration, including the study of lifestyle limitations imposed on patients with these kinds of eye diseases. Clinical projects include studies that analyze the prevention of visual impairment and blindness in school-age children, comparative effectiveness research, and glaucomatous visual field and optic nerve progression.



Honors

Received the Suzanne Véronneau-Troutman Award from Women in Ophthalmology at the October 2016 American Academy of Ophthalmology annual meeting in Chicago, Illinois.

Elected to the National Academy of Sciences, Engineering, and Medicine—among the highest honors in the fields of health and medicine—on October 17, 2016.

Public Service

Associate Editor, Editorial Board, *American Journal of Ophthalmology*

Mentor, Women's Leadership, Association for Research in Vision and Ophthalmology

Council Chair, American Ophthalmological Society

Member, Fight for Sight Scientific Review Committee

Member, Glaucoma Research Foundation Scientific Advisory Committee

Member, Board of Trustees, Helen Keller International

Board Member, International Council of Ophthalmology Foundation

Member, National Academy of Sciences, Engineering, and Medicine, Committee on Human Rights

Member, NIH/CSR Neurological, Aging and Musculoskeletal Epidemiology (NAME) Study Section Review Group

Member, National Glaucoma Research Review/Bright Focus

Member, Research to Prevent Blindness Scientific Advisory Board Panel

Director/Trustee, St. John of Jerusalem Eye Hospital Group

US Hospitalier, The Most Venerable Order of the Hospital of St. John of Jerusalem

Research Grants

Andrea Bocelli Foundation: UCLA Mobile Clinic Project and UCLA Mobile Eye Clinic, 2/6/14–12/31/16

LA County Children and Families First (First 5 LA): UCLA Mobile Eye Clinic Child Vision Program, 7/1/13–9/30/17

National Eye Institute (subaward from Washington University): Ocular Hypertension Treatment Study 20-Year Follow-Up, 7/1/15–6/30/18

Joseph L. Demer, MD, PhD

Arthur L. Rosenbaum, MD, Chair in Pediatric Ophthalmology
Professor of Ophthalmology
Professor of Neurology
Chief of the Pediatric Ophthalmology and Strabismus Division
Member of the Stein Eye Institute

Motility and Vision

Dr. Demer studies the role of the brain and extraocular muscles in the control of eye movements and visual perception. He is directing a National Eye Institute research project aimed at developing an understanding of the role of orbital connective tissues and nerves in the development of binocular coordination disorders, such as strabismus, and is developing new technologies for magnetic resonance imaging of extraocular muscles and nerves. This research has contributed to the knowledge of the functional anatomy of extraocular muscles and connective tissues, allowing development of new types of surgeries. An emerging research topic is the possible role of extraocular muscle forces in the development of optic neuropathies, such as glaucoma and anterior ischemic optic neuropathy.

Dr. Demer's research also employs novel micro- and nano-technological techniques to study the biomechanical properties of the extraocular muscles and associated tissues, as well as optical and x-ray imaging of the effects of physiological forces in the tissues.

Public Service

Editorial Board Member, *Investigative Ophthalmology and Visual Science*

Editorial Board Member, *Journal of the American Association for Pediatric Ophthalmology and Strabismus*

Associate Editor, *Strabismus*

Grant Reviewer, United States Public Health Service

Scientific Advisory Committee Member, Knights Templar Eye Foundation

Council Member, International Strabismological Association

Reviewer for many medical and scientific journals

Research Grants

National Eye Institute: Biomechanical Analysis in Strabismus Surgery, 5/1/16–4/30/20



Sophie X. Deng, MD, PhD

Associate Professor of Ophthalmology

Member of the UCLA Jonsson Comprehensive Cancer Center

Member of the UCLA Broad Stem Cell Research Center

Member of the Stein Eye Institute

Limbal Stem Cell Deficiency

Dr. Deng's research is focused on improving the current diagnosis and treatments for patients with limbal stem cell deficiency. One of her ongoing clinical studies using laser scanning in vivo confocal microscopy in patients with limbal stem cell deficiency shows correlated cellular changes in the cornea and limbus. Damages to the limbal stem cells could be detected and correlated with clinical presentation. This new technique could allow for a better understanding of the pathophysiology of limbal stem cell deficiency. Another study focuses on finding a better diagnostic marker for limbal stem cell deficiency. By using the new diagnostic marker and in vivo confocal imaging, a timely diagnosis and staging of disease progression could be achieved.

Dr. Deng's laboratory studies the microenvironment/niche of the limbal stem cells to elucidate those factors that govern the fate of limbal stem cells. The role of the Wnt signal transduction pathway in human limbal stem/progenitor cells is under investigation. Recent study in her laboratory reveals that activation of the Wnt/ β -catenin promotes self-renewal of limbal stem cells and that Frizzled 7 might be the receptor that mediates the Wnt activation. Use of small molecules to modulate Wnt signaling is being investigated to increase the efficiency of ex vivo expansion of limbal stem cells for transplantation.

Dr. Deng's laboratory is also trying to achieve patient-specific therapy by regenerating autologous limbal stem cells in a xenobiotic-free culturing system for transplantation. They have

developed xenobiotic-free and feeder-free culture methods to expand autologous limbal stem cells in culture. Pre-clinical studies are ongoing to bring this stem cell therapy to restore vision in patients who suffer from limbal stem cell deficiency.

Cornea Endothelial Dysfunction

Another area of Dr. Deng's research is the development of cell therapy to treat endothelial dysfunction by regeneration of human corneal endothelial cells. Currently, her laboratory focuses on investigating the signature genes of cornea endothelial cells and the regulation of these quiescent cells. Another project aims to increase the efficiency of expansion of corneal endothelial cells in culture and derivation of these cells from pluripotent stem cells.

Honors

Received an Achievement Award at the October 2016 American Academy of Ophthalmology annual meeting in Chicago, Illinois.

Public Service

Member, American Academy of Ophthalmology Ophthalmic Technology Assessment Committee, Cornea and Anterior Segment Disorders Panel

Member, Annual Meeting Program Committee (Cornea Section), Association for Research in Vision and Ophthalmology

Representative, Cornea Society, Association of University Professors of Ophthalmology Fellowship Compliance Committee

Reviewer for many scientific journals

Research Grants

California Institute for Regenerative Medicine (CIRM): Regeneration of a Normal Corneal Surface by Limbal Stem Cell Therapy, 8/1/16–11/30/18

Dompe Pharmaceutical: An 8-Week Phase II, Multicenter, Randomized, Double-Masked, Vehicle Controlled Parallel Group Study with a 24 or 32 Week Follow-Up Period to Evaluate the Efficacy of a Formulation Containing Antioxidant of Recombinant Human Nerve Growth Factor, 3/17/15–3/16/17

National Eye Institute: Ex Vivo Expansion of Human Limbal Stem Cells for Transplantation, 9/1/12–8/31/17



Gordon L. Fain, PhD

Distinguished Professor of the Departments of Integrative Biology/Physiology and of Ophthalmology

Member of the Stein Eye Institute

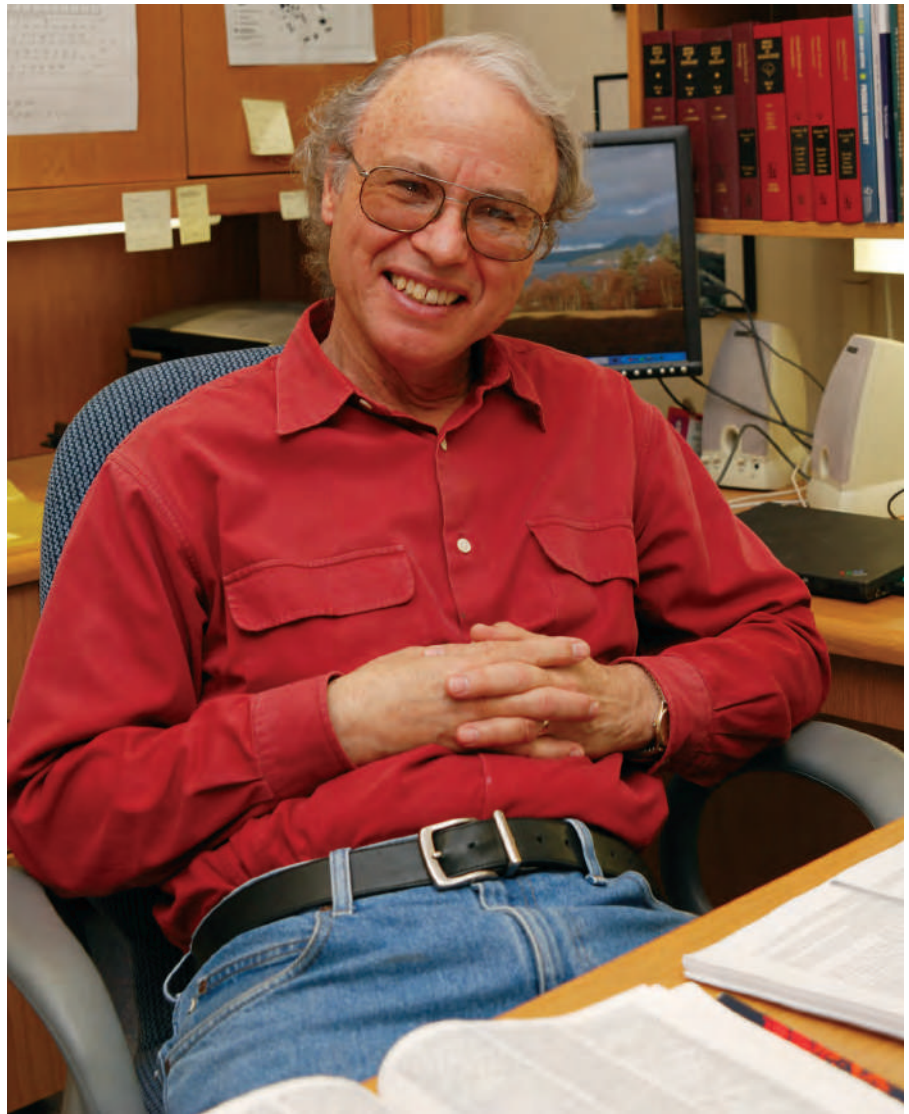
Research Grants

National Eye Institute: Physiology of Photoreceptors, 8/1/12–7/31/21

Physiology of Photoreceptors in the Vertebrate Eye

Dr. Fain's primary research interest is in the physiology of photoreceptors in the vertebrate eye. A vertebrate photoreceptor uses a photopigment called rhodopsin and a G-protein cascade to produce the electrical response that signals a change in light intensity. Powerful new techniques have made it possible to understand the working of this cascade in extraordinary detail. Practically all the protein molecules involved in the cascade in a photoreceptor—from the pigment molecule to the G-protein and channels, but also including a large number of control proteins—are expressed only in the photoreceptors and nowhere else in the body. This has enabled scientists to use genetic techniques to create mice in which these proteins have been knocked out, over- or under-expressed, or replaced with proteins of modified structure.

Dr. Fain's laboratory uses electrical recording to study the effects of such genetic alterations on the light responses of mouse rods, in order to understand the role of these proteins in the visual cascade. His research team is especially interested in modulatory enzymes and their function in light and dark adaptation. Dr. Fain also has a long-standing interest in mechanisms of photoreceptor degeneration in genetically inherited disease. His laboratory is presently the only laboratory measuring changes in calcium from mouse rods with fluorescent dyes. Findings have implicated both increases and decreases in calcium concentration as contributing factors in the triggering of apoptosis. Such information may provide insight into the mechanisms of retinal degeneration.



Debora B. Farber, PhD, DPhhc

Karl Kirchgessner Foundation Chair in Vision Science
 Distinguished Professor of Ophthalmology
 Member of the Brain Research Institute
 Member of the Molecular Biology Institute
 Member of the Stein Eye Institute

Retinal Biochemistry, Molecular Biology, Genetics of Retinal Degenerations, and Studies on Embryonic Stem Cell-Derived Extracellular Vesicles

Dr. Farber's research focuses on the study of genes involved in inherited retinal diseases, and on the characterization and use of human extracellular vesicles released by embryonic stem cells (ESEVs) for retinal therapy. Her team has worked on several genes encoding proteins that play a key role in vision and that when mutated cause blinding diseases. These include the β -PDE gene (mutated in *rd* mice, Irish setter dogs, and in humans with autosomal recessive retinitis pigmentosa (arRP); the *RP1* gene (responsible for a type of autosomal dominant RP); the gene causing disease in the *rd7* mouse, a model for Enhanced S-Cone Syndrome; the α -transducin gene, disrupted in the *Rd4* mouse, another model of retinal disease; the mouse homologue of the gene causing X-linked juvenile retinoblastoma (*Xlrs1*); and the cone genes *ZBED4* and *RHBDD2*, that when mutated cause arCRD and arRP, respectively. Utilizing gene therapy methods, Dr. Farber and collaborators delivered the normal β -PDE gene to *rd* mouse retinas and rescued their photoreceptors. Dr. Farber's group also worked on the mechanisms that regulate transcription and expression of retinal genes. They found that the transcription factor SP4 controls the activity of the β -PDE promoter and mutations in both SP4 and α -transducin cause digenic arRP and cone-rod dystrophy (arCRD).

Other projects center on the study of animal models of ocular albinism, which lack the *OA1* gene and are affected with permanent visual impairment. An important discovery of Dr. Farber's team related to this work is that mutations in another gene, *Gai3*, also cause ocular albinism.

Currently, the main focus of Dr. Farber's group is the study of human ESEVs, nanoparticles that may have a pro-regenerative potential: by triggering molecular changes in Müller glia they may favor regeneration of damaged retinas.

Public Service

Scientific Advisory Board Member, The Foundation Fighting Blindness; Visionary Scientists Board Member, Hope for Vision. Scientific Advisor and Board Member, The Vision of Children Foundation

Editorial Board Member: *Molecular Vision*; *The Open Ophthalmology Journal*; *Journal of Ocular Biology, Diseases, and Informatics*; and *Stem Cells and Cloning Advances and Applications*

Grant Reviewer: National Eye Institute; The Foundation Fighting Blindness; The Vision of Children

Reviewer for many scientific journals

Research Grants

Vision of Children: Patient-Derived iPSCs, CRISPR/Cas and RPE-Derived Exosomes for the Treatment of Ocular Albinism, 6/1/16–5/31/19



JoAnn A. Giaconi, MD

Health Sciences Associate Clinical Professor of Ophthalmology

Chief of the Ophthalmology Section at the Greater Los Angeles VA Healthcare System

Co-Director of Medical Student Education at the David Geffen School of Medicine, UCLA

Member of the Stein Eye Institute

Glaucoma

Dr. Giaconi's research focuses on the treatment of glaucoma. She is interested in glaucoma surgery outcomes and side effects. She is currently working on various projects in the Veteran population, including examination of the over-treatment or undertreatment of glaucoma. She is enrolling patients in two clinical studies at the Stein Eye Institute. One study is examining the effect of various glaucoma surgeries on the corneal endothelium, which is the layer of cells that keeps the cornea clear, and the other study is investigating a new surgical device.

Public Service

Faculty, Glaucoma section of American Academy of Ophthalmology's Basic and Clinical Science Course

Program Committee, American Glaucoma Society annual meeting

President-Elect, Medical Student Educators Council of the Association of University Professors of Ophthalmology

Nominating Committee, American Academy of Ophthalmology

Committee, American Glaucoma Society Strategic Plan Working Group on Member Education

Councilor and President-Elect, California Academy of Eye Physicians and Surgeons

Past President, Los Angeles Society of Ophthalmology

Volunteer, Eye Care America

Reviewer for many scientific journals



Ben J. Glasgow, MD

The Wasserman Professor of Ophthalmology
Professor of Pathology and Laboratory Medicine
Chief of the Ophthalmic Pathology Division
Member of the Stein Eye Institute

Research Grants

National Eye Institute: Proteins in the Molecular Mechanisms of Tear Film Formation, 2/1/96–5/30/21

Ophthalmic Pathology

Dr. Glasgow's research interests are primarily in the field of ophthalmic pathology. His major focus is the role of human lacrimal gland proteins in the protection and maintenance of the eye. His laboratory is investigating the structure-function relationship of tear lipocalin, the principal lipid carrier protein of tears. Currently, the laboratory has developed a technique called site-directed tryptophan fluorescence to probe and report information regarding molecular motion and solution structure. By studying the molecular mechanisms of tear proteins, Dr. Glasgow is seeking to learn the normal functions of tear lipocalin and its role in maintaining the health of the ocular surface and in the prevention of dry eye diseases. It is hoped that this research will lead to new treatments for dry eye and have broad application to numerous other members of this protein family that transport small, insoluble molecules through the body.



Robert Alan Goldberg, MD

Karen and Frank Dabby Endowed Chair in Ophthalmology
Professor of Ophthalmology
Chief of the Orbital and Ophthalmic Plastic Surgery Division
Director of the UCLA Orbital Disease Center
Co-Director of the UCLA Aesthetic Center
Member of the Stein Eye Institute

Diseases and Therapy of the Eyelid and Orbit

Research into the various surgical approaches to Graves orbitopathy (thyroid eye disease) has resulted in new techniques that include less invasive small incision surgical approaches. In addition, detailed clinical information gathered from patients with Graves orbitopathy is being recorded in a shared database as a way to understand the natural history and response to treatment of this multifaceted disease, which is a cause of significant visual loss and discomfort. Multicenter studies are underway. Dr. Goldberg is also investigating the underlying causes of thyroid-related orbitopathy. The goal of this research is to develop better tests to monitor disease activity, as well as new treatments to address the basic cause of the disease.

Research into orbital and eyelid anatomy, currently in progress, is resulting in improved techniques and approaches to deep orbital disease. Included is the use of high-resolution magnetic resonance imaging and high-resolution dynamic ultrasonography to evaluate motility problems following trauma and orbital surgery, and three-dimensional analysis of orbital anatomy. Improved understanding of eyelid and orbital physiology and anatomy is the basis for developing improved surgical techniques. Instrumentation and devices that allow less invasive surgical approaches, such as hyaluronic acid gels, are being developed and studied. In collaboration with the Department of Engineering, custom materials for orbital reconstruction are investigated.

Outcomes of medical and surgical treatment of orbital and eyelid disorders are being studied in an organized, prospective fashion in order to better understand which treatments are most effective.

Honors

Presented the John Wobig Lecture at the Casey Eye Institute, Oregon Health and Science University, April 21, 2017, in Portland, Oregon.

Public Service

President, American Society of Ophthalmic Plastic and Reconstructive Surgery

Fellowship Program Director, American Academy of Cosmetic Surgery and American Society of Ophthalmic Plastic and Reconstructive Surgery

Editorial Board Member, *Archives of Ophthalmology*, *Ophthalmic Plastic and Reconstructive Surgery*, *Aesthetic Surgery Journal*, and *Archives of Facial Plastic Surgery*

Section Editor, American Academy of Ophthalmology, ONE Network

Research Grants

Premier Research International LLC: A Multicenter, Double-Masked, Placebo-Controlled, Efficacy and Safety Study of RV001, an Insulin-Like Growth Factor-1 Receptor (IGF-1R) Antagonist Antibody (Fully Human), Administered Every 3 Weeks (Q3W) by Intravenous (IV) Infusion in Patients Suffering from Active Thyroid Eye Disease (TED) Protocol TED01RV, 4/16/13–8/31/17



Lynn K. Gordon, MD, PhD

Vernon O. Underwood Family Chair in Ophthalmology

Professor of Ophthalmology

Senior Associate Dean for Academic Diversity,
David Geffen School of Medicine at UCLA

Chair of the College of Applied Anatomy,
David Geffen School of Medicine at UCLA

Member of the Stein Eye Institute

Retinal Cell Biology and Inflammatory Disease

Dr. Gordon's laboratory is involved in two primary areas of research. One project investigates the role for epithelial membrane protein 2 (EMP2) in controlling ocular pathologic responses. Dr. Gordon and her colleagues identified that EMP2 plays an important role in an in-vitro model of proliferative vitreoretinopathy (PVR) and have evidence that EMP2 is highly expressed in human retinal diseases. In addition, they recently identified that EMP2 controls VEGF production in epithelial cells and in specific tumors. The laboratory, in collaboration with others at UCLA, has recently developed a designer antibody fragment that has demonstrated efficacy in in-vitro studies in the PVR model and in other animal models in vivo. This antibody has now been successfully used to control pathologic neovascularization in a corneal burn model, achieving proof of principle for using this antibody to control disease.

The second area of interest of Dr. Gordon's group is the role of programmed death 1 (PD-1), a molecule that is known to play an important role in immune regulation in the eye. PD-1 has a major function as a negative regulator in the immune system. Although previous studies identified PD-1 expression in the lymphoid system, Dr. Gordon and her colleagues identified its expression in neuronal cells of the retina. Additionally her laboratory has identified that blockade of the PD-1 pathway may be protective in uveitis. Studies are ongoing to identify the mechanisms of that protection.

Honors

Began two-year term as Vice Chair of the American Academy of Ophthalmology (AAO) Council on January 1, 2016.

Nominated for a two-year position (2018–2019) as Chair of the American Academy of Ophthalmology Council in April 2017.

Honored with the North American Neuro-Ophthalmology Society (NANOS) Merit Award at the April 5, 2017, NANOS annual meeting in Washington, D.C.

Public Service

Member, Board of Trustees,
American Academy of Ophthalmology

Past-Chair, Group on Women in
Medicine and Science, American
Association of Medical Colleges

Member, Scientific Review Committee,
Fight for Sight Committee

Member, Association for Research
in Vision and Ophthalmology's
WEAVR Committee

Co-Chair, Leadership Development
Program for Women in ARVO

Editorial Board Member,
Ophthalmology, *Investigative
Ophthalmology and Visual Science*,
Journal of Neuro-Ophthalmology, and
Ocular Immunology and Inflammation

Research Grants

National Eye Institute: Pd-Ligand,
A Paradoxical Role in Experimental
Uveitis Pathogenesis and Therapy,
4/1/15–3/31/18



Michael B. Gorin, MD, PhD

Harold and Pauline Price Chair in Ophthalmology

Professor of Ophthalmology

Professor of Human Genetics

Chief of the Division of Retinal Disorders and Ophthalmic Genetics

Member of the Stein Eye Institute

Hereditary Eye Disorders and Molecular Genetics of Age-Related Maculopathy

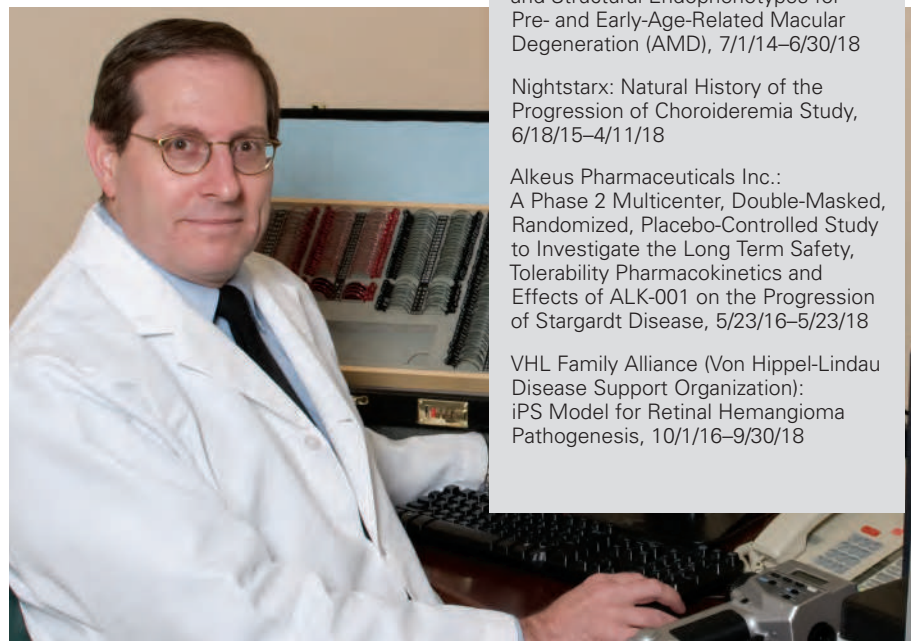
Dr. Gorin's primary research focus is molecular genetics of hereditary eye disorders, specifically age-related macular degeneration (AMD). His research group was the first to identify specific regions of the genome that contributed to ARM development in families, leading to discovery of gene variations that contribute to the risk of developing ARM. He continues to work on studies of the genetics of AMD, in particular the use of genetic risk profiles to test for clinical markers, including sensitive methods for detecting changes in retinal structure and function that precede the onset of clinical disease.

Dr. Gorin investigates the molecular genetics of complex disorders such as cystoid macular edema, age-related cataracts, and glaucoma, as well as monogenic disorders such as hereditary retinal degenerations, glaucoma, cataracts, and ocular syndromes. He is pursuing studies to identify genetic variations that contribute to the severity, complications, and therapeutic responses of these conditions. Dr. Gorin and his clinical team work with the clinical and research human genetics group at UCLA to explore use of new technologies, including next-generation sequencing for clinical utility in ophthalmic genetics.

Research also focuses on the neurobiology of ocular pain and photophobia (sensitivity to light) to understand the basic biology and neural pathways that contribute to photophobia so that new therapeutic strategies can be developed. Based upon preliminary

work, opportunities have emerged to investigate the pathogenesis of light sensitivity for individuals who suffer from migraines and/or mild traumatic brain injury.

Clinical research efforts are directed towards developing methods to monitor and quantify retinal function in progressive retinal disorders (such as diabetic retinopathy, Stargardt disease, and retinitis pigmentosa) and in patients with potential ocular toxicities from systemic medications. Applied research interests include bioinformatics in clinical ophthalmic practice and public health issues pertaining to ocular disease.



Honors

Received the Von Hippel-Lindau (VHL) Alliance Award at the VHL Alliance annual meeting held at UCLA September 23–24, 2016.

Public Service

Member, Medical Education Committee, David Geffen School of Medicine at UCLA

Editorial Board Member, *Current Eye Research* and *Experimental Eye Research*

Advisory Board Member, American Health Assistance Foundation

Member, Ad Hoc Committee for Faculty Advancement and Promotions for the Department of Human Genetics, UCLA

Member, Special National Institutes of Health Study Sections for the National Eye Institute, National Institute on Aging (Claude Pepper Grants), National Human Genome Research, Center for Inherited Disease Research

Scientific Advisory Committee Member, BrightFocus Foundation and the Knights Templar Eye Research Foundation

Member, Research Committee for the Blind Children's Center, Los Angeles

Founding Member, von Hippel-Lindau Center of Excellence at UCLA Medical Center

Member, Clinical Research Governance Committee for UCLA

Member, Data Safety Monitoring Board for jCyte RP Trial JC-01

Reviewer for many scientific journals

Research Grants

Arnold and Mabel Beckman Foundation: Genetics-Based Testing of Functional and Structural Endophenotypes for Pre- and Early-Age-Related Macular Degeneration (AMD), 7/1/14–6/30/18

Nightstarx: Natural History of the Progression of Choroideremia Study, 6/18/15–4/11/18

Alkeus Pharmaceuticals Inc.: A Phase 2 Multicenter, Double-Masked, Randomized, Placebo-Controlled Study to Investigate the Long Term Safety, Tolerability Pharmacokinetics and Effects of ALK-001 on the Progression of Stargardt Disease, 5/23/16–5/23/18

VHL Family Alliance (Von Hippel-Lindau Disease Support Organization): iPS Model for Retinal Hemangioma Pathogenesis, 10/1/16–9/30/18

David Rex Hamilton, MD, FACS

Health Sciences Clinical Professor of Ophthalmology

Director of the UCLA Laser Refractive Center

Member of the Stein Eye Institute

Advanced Intraocular Lenses

Dr. Hamilton's research interests are in the areas of corneal biomechanics and tomography (3D imaging of the cornea), screening for corneal ectatic disorders, and the clinical study of intraocular lenses (IOLs) for the treatment of high myopia (phakic IOLs), astigmatism (toric IOLs), and presbyopia (multifocal and accommodating IOLs). Dr. Hamilton is actively involved in training residents and fellows in the surgical treatment of refractive errors and cataracts.

Public Service

Editorial Board Member, *Ophthalmology*, *Journal of Refractive Surgery*, and *Journal of Cataract and Refractive Surgery*

Member, Refractive Leadership Council, Alcon Laboratories

Member, ASCRS Refractive Surgery Clinical Committee

Member, ASCRS Refractive Surgery/Cataract Clinical Subcommittee

Member, American Academy of Ophthalmology, Preferred Practice Pattern Committee for Refractive Surgery

Member, American Academy of Ophthalmology, ONE Network, Refractive Surgery



Gary N. Holland, MD

Jack H. Skirball Chair in Ocular Inflammatory Diseases

Professor of Ophthalmology

Director of the Ocular Inflammatory Disease Center

Director of the UCLA Department of Ophthalmology Clinical Research Center

Co-Director of Medical Student Education

Member of the Stein Eye Institute

Uveitis and Cornea-External Ocular Diseases

Dr. Holland's research deals with infectious and inflammatory diseases of the eye, including ocular toxoplasmosis; HIV-related eye disease; chronic anterior uveitis in children; and birdshot chorioretinopathy. Clinical studies are being performed to identify populations at greatest risk for these ocular diseases and factors that influence disease severity. Studies also investigate the course of these diseases and response to new treatments. Better understanding of these conditions may lead to improved disease management.

Ocular toxoplasmosis, caused by a parasite, is the most common retinal infection in the general population. With investigators in North America, Brazil, and Europe, Dr. Holland is studying human and parasitic genetic factors that influence risk for ocular involvement among people infected with the parasite.

Dr. Holland continues to study cytomegalovirus (CMV) retinitis, the most serious eye problem among HIV-infected individuals, and still a major public-health problem in many areas of the world because of the AIDS pandemic. He is also investigating HIV-related "neuroretinal disorder" (NRD), a degenerative condition that causes deterioration of vision and reduced quality of life, even among individuals whose immune function has improved because of antiretroviral drugs. NRD is also a marker of non-ocular, life-threatening diseases among HIV-infected people.

Chronic anterior uveitis is a common complication of juvenile idiopathic arthritis (JIA). Dr. Holland is studying risk factors for, and treatment of, vision-threatening complications of JIA-associated uveitis, including glaucoma, and he is interested in the psychosocial impact of uveitis on children and their families.

Birdshot chorioretinopathy is a chronic autoimmune disease of the eye. Dr. Holland is participating in several multicenter studies involving retinal imaging and electrophysiologic techniques to understand the basis for vision loss among people with the disease. He also helped to organize and is analyzing data from a 10-year longitudinal clinical study of the disease in Paris, France, that involves a large cohort of patients.

Public Service

Associate Editor, *American Journal of Ophthalmology*

Editorial Board, *EyeNet Magazine* (American Academy of Ophthalmology), Section Editor, Uveitis

Executive Committee Member, American Uveitis Society

Research Grants

Ocata Therapeutics (formerly Advanced Cell Technology, Inc.): ARO Agreement A Phase I/II, Open-Label, Multicenter, Prospective Study to Determine the Safety and Tolerability of Subretinal Transplantation...Patients with Stargardt Macular Dystrophy SMD, 4/25/11–11/22/16

Ocata Therapeutics (formerly Advanced Cell Technology, Inc.): ARO Agreement A Phase I/II, Open-Label, Multicenter, Prospective Study to Determine the Safety and Tolerability of Subretinal Transplantation... Patients with Advanced Dry AMD, 5/31/11–11/22/16

National Eye Institute (subaward from Johns Hopkins University): Multicenter Uveitis Steroid Treatment (MUST) Trial, 6/1/12–5/2/17

National Eye Institute (subaward from Johns Hopkins University): Macular Edema Treatment Trial Associated with MUST (META-MUST), 9/30/14–1/31/18

University of Pittsburgh, Systemic Immunosuppressive Therapy for Eye Diseases Cohort Study (SITE), 3/2/16–3/2/21

University of Pittsburgh, Systemic Immunosuppressive Therapy for Eye Disease (Cancer Surveillance and Research Branch/CCR), 3/2/16–3/2/21



Joseph Horwitz, PhD

Oppenheimer Brothers Chair

Distinguished Professor of Ophthalmology

Member of the Stein Eye Institute

Research Grants

National Eye Institute: Analysis of Lens Crystallins and Cataractous Mutants at High Hydrostatic Pressure, 4/1/14–3/31/19

Biochemistry and Biophysics of the Crystalline Lens

Dr. Horwitz is conducting research on the biochemical and biophysical properties of normal and cataractous lens proteins. In addition, he is investigating the molecular chaperone properties of the lens' alpha-crystallin, a protein that plays an important role in keeping the eye lens clear during normal aging. Alpha-crystallin is also involved in age-related macular degeneration, as well as in many other neurodegenerative diseases. New spectroscopical techniques are currently being developed for studying protein function and structure utilizing extremely high hydrostatic pressure.



Wayne L. Hubbell, PhD

Jules Stein Chair in Ophthalmology

Distinguished Professor of Ophthalmology

Distinguished Professor of Chemistry and Biochemistry

Molecular Basis of Phototransduction in the Vertebrate Retina

Dr. Hubbell's research is focused on understanding the complex relationship between molecular structure, plasticity, and conformational changes that control protein function in the visual system. Of particular interest are proteins that behave as "molecular switches," that is proteins whose structures are switched to an active state by a physical or chemical signal. Examples include rhodopsin, the membrane-bound photoreceptor protein of the retina, and transducin and arrestin, proteins that associate with rhodopsin during function. The overall goal is to determine the structure of these proteins in their native environment, monitor the changes in structure that accompany the transition to an active state, and to understand the role of protein flexibility in function.

To investigate these and other proteins, Dr. Hubbell's laboratory has developed the technique of site-directed spin labeling, a novel and powerful approach to the exploration of protein structure and dynamics. By changing the genetic code, a specific attachment point in the protein is created for a nitroxide spin label probe. Analysis of the electron paramagnetic resonance (EPR) spectrum of the spin label provides information about the local environment in the protein. With a sufficiently large set of labeled proteins, global information on structure

is obtained and changes in the structure during function can be followed in real time. While determination of static protein structure is important to understanding function, current research has highlighted a crucial role for protein flexibility (dynamics), which has not been previously appreciated. To explore molecular flexibility in proteins of the visual system, Dr. Hubbell's group is developing novel methods using time-domain and high-pressure EPR.

Public Service

Member, National Academy of Sciences

Member, American Academy of Arts and Sciences

Research Grants

National Eye Institute:
Molecular Basis of Membrane Excitation, 5/1/15-4/30/20



Jean-Pierre Hubschman, MD

Associate Professor of Ophthalmology

Member of the Stein Eye Institute

Advanced Vitreoretinal Surgical Interventions and Robotics

Dr. Hubschman's clinical research focuses on the development and evaluation of new vitreoretinal surgical techniques and robotics for ophthalmic surgery. Automated surgery utilizing robotics promises to increase surgical precision and accuracy, as well as improve access to medical care. Dr. Hubschman's publications include research papers on the development of a new retinal patch for the treatment of retinal detachment, on the feasibility of robotic surgery in ophthalmology, and results of various clinical trials. Currently, he is also investigating the use of the terahertz laser for the evaluation of ocular tissue hydration.

Public Service

Reviewer for many scientific journals

Research Grants

National Eye Institute: Intraocular Robotic Interventional Surgical System for Cataract Surgery Project, 9/30/14–6/29/17

Lowy Medical Research Institute: A Ph 2 Multicenter Randomized Clinical Trial of Ciliary Neurotrophic Factor (CNTF) for Macular Telangiectasia Type 2 (Mac Tel), 8/6/14–6/30/18

Lowy Medical Research Institute: A Natural History of Macular (Parafoveal) Telangiectasia, 9/1/05–12/31/18

Ophthotech Corporation: A Phase 3, RDM, Controlled Trial to Establish the Safety and Efficacy of Intravitreal Administration of Fovista (Anti PDGF-B Pegylated Apramer) Administered... ARMD, 12/4/13–9/27/17

Thrombogenics, Inc.: Ocriplasmin Research to Better Inform Treatment, 7/16/14–7/15/16



Sherwin J. Isenberg, MD

Laraine and David Gerber Chair in Ophthalmology

Distinguished Professor of Ophthalmology

Professor of Pediatrics

Member of the Stein Eye Institute

Pediatric Ophthalmology, Amblyopia, and Ophthalmic Pharmacology

Dr. Isenberg's research activities have concentrated on various aspects of surgical and medical diseases of children's eyes. The goal is to decrease the frequency of blindness in children worldwide. In a series of studies of newborns, Dr. Isenberg has characterized a number of elements, including: the type and source of bacteria of the external eye at birth; the evolution of iris structural changes; the development of the macula, which is the source of central vision; and pupillary responses after birth. Recent publications have characterized the production and nature of tears of infants and the development of the cornea in the first year of life. He has also reported the ocular signs in newborns whose mothers abuse cocaine, facilitating the diagnosis of newborn cocaine intoxication.

In another avenue of research, povidone-iodine eyedrops have been found to treat bacterial conjunctivitis successfully in a three-year, international study with the University of the Philippines. The eyedrops were also found to be safer and more effective in preventing eye infections than the currently used agents. Dr. Isenberg and other investigators have now proven that the povidone-iodine eyedrops can treat the number one cause of preventable pediatric blindness in the world—corneal infections due to bacteria. These studies, conducted in children and adults in India and the Philippines, should reduce the number of 400,000 children now blind from corneal infections. A new study investigating fungal infections of the eye, which blind approximately 10,000 children annually, has been completed at three sites in India.

Lastly, a new device that reports blood gases from the conjunctiva, such as oxygen and carbon dioxide, is being developed. Preliminary trials have been completed in animals and in adults undergoing cardiac bypass surgery. The hope is to apply the device to the eyes of premature newborns. The continuous readout of tissue blood gas levels should enable the pediatrician to prevent damage to the baby's brain and keep the oxygen at an appropriate level, minimizing the possibility of blindness from retinopathy of prematurity.

Honors

Honored as a "Legend" by LA BioMed for distinguished service and contributions to ophthalmology on November 15, 2016, in Los Angeles, California.

Public Service

Past-President, American Association for Pediatric Ophthalmology and Strabismus

Member, Medical Advisory Board and Board of Directors; and Research Committee Chair, Blind Children's Center

Past President, Costenbader Pediatric Ophthalmology Society

Co-Founder and Delegate, International Pediatric Ophthalmology and Strabismus Council



Simon K. Law, MD, PharmD

Health Sciences Clinical Professor of Ophthalmology

Member of the Stein Eye Institute

Optic Disc Evaluation

Dr. Law's principal research interest focuses on the structural appearance of the optic disc in different ocular diseases, including patients with high myopia. Assessment of optic disc size is an important component of the diagnostic evaluation for glaucoma. Patients with high myopia are at greater risk of developing glaucoma, and they also have an atypical optic disc that makes diagnosis difficult. The purpose of Dr. Law's research is to characterize the appearance of the optic disc in eyes with high myopia and to identify the related risk factors for development of glaucoma.

Glaucoma Filtering Procedure

Trabeculectomy is the traditional time-honored procedure for glaucoma, and it is considered the gold standard by which newer procedures are compared. The success rate of trabeculectomy, however, is lower in eyes that have undergone prior intraocular surgery. Dr. Law is interested in perfecting the procedure in these cases and in developing a surgical technique to improve the pressure reduction function in current trabeculectomy.

LASIK and Glaucoma

LASIK refractive procedure has been popular for many years for patients with high myopia. As high myopia is a risk factor for glaucoma, some middle-aged patients with prior LASIK have developed the disease. Because of LASIK's effect on the cornea, eye pressure estimation has been inaccurate after LASIK, and monitoring of glaucoma is difficult in these eyes. Dr. Law is currently studying the outcomes of glaucoma management in glaucoma patients who have had a prior LASIK refractive procedure.

Public Service

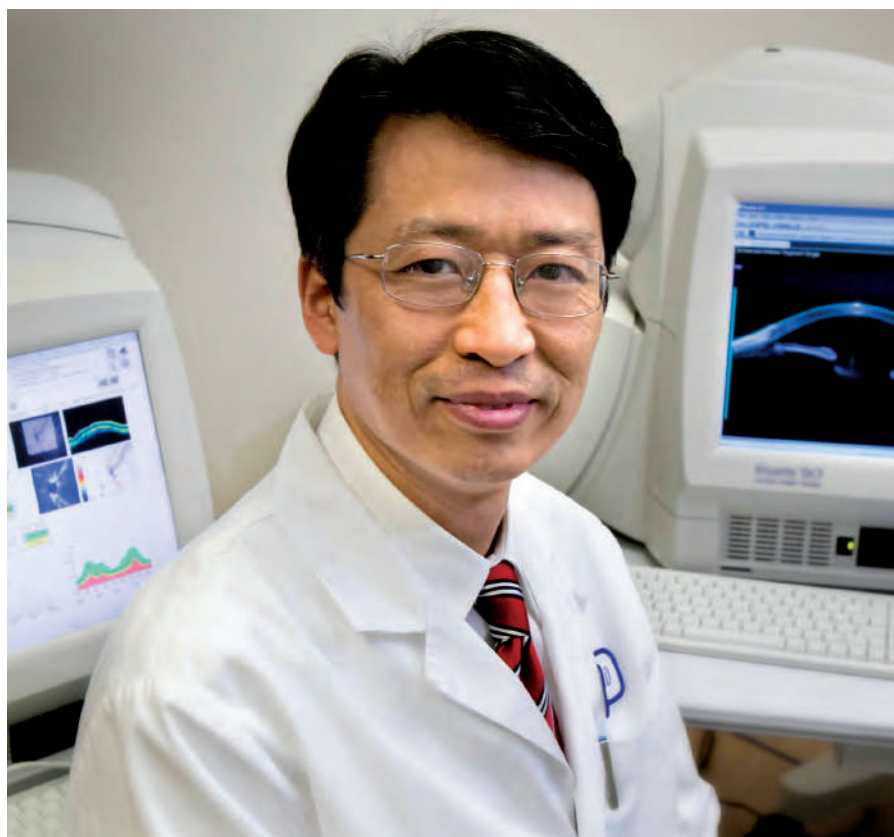
Expert Reviewer, Medical Board of California

Pharmacy Editor, *eMedicine*

Member of the Committee on Aging, American Academy of Ophthalmology

Subcommittee Member, American Academy of Ophthalmology Basic and Clinical Science Course

Reviewer for many scientific journals



Ralph D. Levinson, MD

Health Sciences Clinical Professor of Ophthalmology
Member of the Stein Eye Institute

Ocular Inflammatory Diseases

Dr. Levinson's research interest is in both the clinical aspects of uveitis and the basic mechanisms and immunogenetics of ocular inflammation. Current projects include a collaborative longitudinal study of a chronic inflammatory disease, birdshot chorioretinopathy, with investigators in France. The study focuses on the interrelationship of disease factors, as well as the course of disease and response to treatment. Dr. Levinson is also conducting laboratory research on cell-based therapies for uveitis and is a co-investigator for National Eye Institute-funded laboratory research on the effects of cancer immunotherapy on uveitis.

Public Service

ONE Committee, American Academy of Ophthalmology

Reviewing Editor, *Ocular Immunology and Inflammation*

Institutional Review Board Member, UCLA

Reviewer for many scientific journals



Colin A. McCannel, MD

Professor of Clinical Ophthalmology

Member of the Stein Eye Institute

Vitreoretinal Surgery

Dr. McCannel has a longstanding interest in the management of vitreoretinal conditions, particularly complex retinal detachments, complications of diabetic retinopathy, macular holes and epimacular membranes, and age-related macular degeneration. His clinical research efforts are directed at the improvement of vitreoretinal surgical techniques and outcomes, including the prevention of endophthalmitis following intravitreal injections.

Dr. McCannel devotes time to educational research as well. Currently, he is investigating the utility of virtual reality surgery simulation in teaching ophthalmic surgery. He has several ongoing protocols that assess ophthalmic surgical simulation in surgical teaching.



Honors

Received the Secretariat Award and a Senior Achievement Award at the October 2016 American Academy of Ophthalmology annual meeting in Chicago, Illinois.

Public Service

Moderator, "Retina Talk" online discussion forum, American Association of Retina Specialists

Chair, Editorial Committee, Retina and Vitreous Basic and Clinical Science Course, Section 12, American Academy of Ophthalmology

Medical Information Technology Committee Member, American Academy of Ophthalmology

Reviewer for many scientific journals

Research Grants

Genentech, Inc.: A Phase II, Multicenter, Randomized, Active Treatment-Controlled Study of the Efficacy and Safety of the Ranibizumab Port Delivery System for Sustained Delivery of Ranibizumab in Patients with Subfoveal Neovascular Age-Related Macular Degeneration, 9/22/15–6/27/18

Tara A. McCannel, MD, PhD

Health Sciences Associate Clinical Professor of Ophthalmology

Director of the Ophthalmic Oncology Center

Member of the Stein Eye Institute

Public Service

Reviewer for many scientific journals

Metastatic Ocular Melanoma

Dr. McCannel's primary research interest is metastatic ocular melanoma. Under her direction, the Ophthalmic Oncology Laboratory is studying molecular markers in ocular melanoma to provide prognostic information to patients and advance understanding of metastatic disease. Discovery of candidate genes from tissue of patients undergoing surgical treatment for ocular melanoma is being explored. This information will be important to establish a better understanding of the biology of metastatic ocular melanoma and help develop better treatments for this cancer. New modalities are being investigated to predict, detect, and ultimately treat choroidal melanoma metastasis.

Surgical Approaches to Vitreoretinal Disease and Cancer

Dr. McCannel is both a vitreoretinal surgeon and an ophthalmic oncologist. She manages the spectrum of vitreoretinal disease in addition to the surgical management of ocular melanoma, allowing patients to benefit maximally from her wide range of surgical prognostic and therapeutic expertise.

Vitrectomy with silicone oil placement is a novel therapeutic strategy, which was discovered at UCLA to reduce radiation exposure to the healthy structures of the eye during plaque surgery for melanoma treatment. Dr. McCannel offers this potentially sight-saving technique to patients who need radiation treatment.



Health Psychology and Ocular Melanoma

Central to incorporating an integrative approach to health care, the concerns and wishes of the patient as a whole are important aspects of cancer management. In collaboration with the UCLA Department of Health Psychology and the Jonsson Comprehensive Cancer Center, Dr. McCannel works closely with health psychologists who are interested in providing clinical care while researching factors, which predict psychological adjustment to cancer.

Kevin M. Miller, MD

Kolokotronis Chair in Ophthalmology

Professor of Clinical Ophthalmology

Chief of the Cataract and Refractive Surgery Division

Director of the Anterior Segment Diagnostic Laboratory

Member of the Stein Eye Institute

Cataract and Refractive Surgery

Dr. Miller's research interests are in cataract and refractive surgery, intraocular lenses, artificial iris implants, ophthalmic optics, surgical devices, and surgical outcomes.

Dr. Miller's clinical practice focuses primarily on refractive cataract surgery and the surgical correction of presbyopia and astigmatism with premium technology intraocular lenses. He developed an astigmatism management service for treating corneal astigmatism at the time of cataract surgery that optimizes postoperative uncorrected visual acuity. He developed a nomogram for peripheral corneal relaxing incisions and participated in the clinical trial of the world's most popular toric intraocular lens. He was instrumental in bringing femtosecond laser technology to UCLA for use in cataract surgery. He described a non-parametric multivariate technique for comparing astigmatism outcomes between treatment groups. In addition

to refractive cataract surgery and ICL implantation, he also performs DSEK, LASIK, PRK, and other cornea-based laser refractive procedures.

Dr. Miller runs several clinical trials of artificial iris implants to treat congenital and acquired aniridia. He completed the multicenter Ophtec 311 clinical trial. He has an individual device exemption from the FDA to study Morcher artificial iris implants. He is the only surgeon in the United States who is permitted by the FDA to implant Morcher devices at this time. He is also studying a custom artificial iris implant from Dr. Schmidt Intraocularlinsen, a subsidiary of HumanOptics. All of these devices are showing promising results in patients who suffer from congenital and acquired iris defects.

Finally, he is an investigator in the RxSight light adjustable lens study and the Alcon Laboratories high-power toric lens post-market approval study.



Public Service

Course Director, Southern California Basic and Advanced Cataract Surgery Courses for Residents and Fellows

Co-Organizer, Biannual Curso Universitario Internacional de Oftalmología, Santiago, Chile

American Academy of Ophthalmology, Skills Transfer Course Advisory Committee

American Academy of Ophthalmology, Annual Meeting Program Committee, Cataract Subcommittee

American Academy of Ophthalmology, Preferred Practice Patterns Committee, Anterior Segment Panel

American Society of Cataract and Refractive Surgery, Cataract Clinical Committee, Retina Clinical Committee, and Skills Transfer Subcommittee

Executive Editor, *American Journal of Ophthalmology*

Faculty of 1000, Post-Publication Peer Review, Lens Disorders Section

International Editorial Board, *Oftalmologia Em Foco* and *Revisita Brasileira de Oftalmologia*

Editorial Board, Cataract Section, American Society of Cataract and Refractive Surgery, *EyeWorld* Magazine

Editorial Board, *Cataract and Refractive Surgery Today*

Editorial Board, American Academy of Ophthalmology, *EyeNet* Magazine

Reviewer for many scientific journals

Research Grants

Alcon Laboratories, Inc.: Post Approval Study of the Acrysof IQ Toric High Cylinder Power Intraocular Lens (IOL), 4/17/12–11/18/16

Calhoun Vision, Inc.: A Prospective Randomized Controlled Multicenter Clinical Study to Evaluate the Safety and Effectiveness of the Light Adjustable Lens, 7/26/12–7/28/16

Clinical Research Consultants, Inc.: Safety and Effectiveness of the Customflex Artificial Iris Prosthesis for the Treatment of Iris Defects (AI-001), 6/12/14–2/21/18

Bartly J. Mondino, MD

Bradley R. Straatsma, MD, Endowed Chair in Ophthalmology

Distinguished Professor of Ophthalmology

Chairman, UCLA Department of Ophthalmology

Director, Stein Eye Institute

Member, UCLA Brain Research Institute

Board of Directors (Observer), Doheny Eye Institute

Affiliation Chairman, Doheny Eye Institute

Public Service

Medical Advisory Board Member,
Braille Institute

Editorial Board Member, *Ophthalmic
Surgery, Lasers and Imaging*

Vice President and Board of Directors
Member, National Alliance for
Eye and Vision Research

Research Grants

Research to Prevent Blindness:
Departmental Unrestricted Grant
Award (Annual), 1/1/12–12/31/17

Cornea and External Ocular Diseases and Immunological Disorders

Dr. Mondino's research activity is focused on cornea-external ocular diseases, with particular emphasis on immunological disorders. He has studied the role of lymphocytes and the complement system in the immunopathogenesis of anterior segment diseases. In addition, a model of staphylococcal hypersensitivity lesions of the cornea was explored as well as the immune response to staphylococcal endophthalmitis. Other research interests included corneal dystrophies, peripheral corneal ulcers, bullous diseases of the skin and mucous membranes, collagen shields, and contact lens-related corneal ulcers.



Kouros Nouri-Mahdavi, MD, MSc

Associate Professor of Ophthalmology

Director of the Glaucoma Advanced Imaging Laboratory

Member of the Stein Eye Institute

Role of Structural and Functional Measurements for Detection of Glaucoma and Its Progression

Dr. Nouri-Mahdavi's research is focused on improving methods to detect early glaucoma and glaucoma deterioration with spectral-domain optical coherence tomography (SD-OCT) and various perimetry techniques. More specifically, he is interested in detection of glaucoma progression in patients with advanced disease. Dr. Nouri-Mahdavi is currently exploring the role of macular imaging for detection of glaucoma progression in a cohort of advanced glaucoma patients.

Glaucoma Treatment Outcomes and Role of Ethnicity

Dr. Nouri-Mahdavi is also interested in studying glaucoma treatment outcomes and their variations as a function of ethnicity. An ongoing study is comparing the long-term outcomes of trabeculectomy with adjunctive mitomycin C in patients of African descent to those of European descent.



Public Service

Member, American Academy of Ophthalmology Glaucoma Registry Measures Working Group

Member, American Glaucoma Society Patient Care Committee, Document Subcommittee

Member, Residency Program Evaluation Committee

Member, Stein Eye Institute Electronic Medical Record Implementation Committee

Member, Glaucoma Progression Scholars

Member, International Education Subcommittee, Education and Communication Committee, American Glaucoma Society

Advisory Board Member, *Journal of Current Ophthalmology*

Editorial Board Member, *Journal of Ophthalmic and Vision Research*

Glaucoma Section Editor, *Journal of Vision and Eye Research*

Methodologist, American Academy of Ophthalmology Ophthalmic Technology Assessment Committee

Volunteer, EyeCare America, provide ophthalmic patient screening at annual Los Angeles charity clinic events

Reviewer for many scientific journals

Research Grants

National Eye Institute: Detection of Glaucoma Progression with Macular OCT Imaging, 7/1/12–6/30/17

Steven Nusinowitz, PhD

Professor of Ophthalmology

Co-Director of the Visual Physiology Laboratory

Director of the Live Imaging and Functional Evaluation (LIFE) Core

Member of the Stein Eye Institute

Mechanisms of Retinal Degeneration

Dr. Nusinowitz's primary research interest is focused on understanding the cellular contributions to noninvasive measures of visual function and defining the sites and mechanisms of disease action in inherited retinal and visual pathway disorders. In his research laboratory, Dr. Nusinowitz's main approach to gaining an understanding of the site and mechanism of vision loss in humans is to study the patterns of electrophysiological responses obtained from mice in which the disruption of different cells or pathways in the visual system are specifically targeted by genetic manipulation. By comparing the patterns of responses in human disease with the patterns of responses from rodents with targeted cellular disruption, Dr. Nusinowitz is able to test hypotheses about the underlying pathophysiology in human disease and to provide a mechanism for the development of specific diagnostic tools that are sufficiently sensitive for early detection and better diagnosis of clinical disease. In addition, on a more applied level, Dr. Nusinowitz's research studies in both humans and mice have involved investigations testing the efficacy of multiple therapeutic interventions for retinal disease, including pharmacological, viral, and stem cell therapies.

Public Service

Editorial Board Service,
Current Eye Research

Grant Reviewer: National Eye Institute (ad hoc)

Intramural Program Review
Committee: National Eye Institute

Scientific Advisor: The Mouse Mutant Resource, The Jackson Laboratory; and Ionis (formerly ISIS) Pharmaceuticals, Inc.

Data Safety Monitoring (Clinical Trials):
New Drug Investigations, Ionis (formerly ISIS) Pharmaceuticals, Inc.
Allergan Pharmaceuticals

Reviewer for *Current Eye Research*,
Experimental Eye Research,
Investigative Ophthalmology and Vision Science,
Visual Neurosciences

Research Grants

BrightFocus Foundation: Scotopic
Critical Flicker Fusion in Preclinical
AMD, 7/1/15–6/30/18



Stacy L. Pineles, MD

Associate Professor of Ophthalmology

Member of the Stein Eye Institute

Pediatric Neuro-Ophthalmology, Amblyopia, and Neurologic Causes of Strabismus

Dr. Pineles' research interests include evaluating the surgical outcomes of strabismus surgery and studying pediatric optic nerve diseases. With her dual training in pediatric ophthalmology and neuro-ophthalmology, she has a special interest in pediatric neuro-ophthalmic diseases, as well as adult patients with amblyopia and neurologic causes of strabismus.



Honors

Received an Achievement Award at the October 2016 American Academy of Ophthalmology annual meeting in Chicago, Illinois.

Public Service

Member, Department of Ophthalmology Residency Training Committee and Department of Ophthalmology Residency Selection Committee

Associate Residency Director, Department of Ophthalmology

Secretary/Treasurer, UCLA Stein Eye Institute Alumni Association, Department of Ophthalmology

Member, Research Committee, American Academy of Pediatric Ophthalmology and Strabismus

Member, Professional Education Committee, American Academy of Pediatric Ophthalmology and Strabismus

Member, Adult Strabismus Task Force, American Academy of Pediatric Ophthalmology and Strabismus

Member, Young Neuro-Ophthalmologists Committee, North American Neuro-Ophthalmology Society

Member, Walsh Committee, North American Neuro-Ophthalmology Society

Member, Ophthalmic Technology Assessment Committee Pediatric Ophthalmology and Strabismus, American Academy of Ophthalmology

Reviewer and editorial board member for many scientific journals

Research Grants

Jaeb Center for Health Research: Pediatric Eye Disease Investigator Group (PEDIG), 2/28/11–12/31/17

NIH/National Eye Institute: Binocular Summation in Strabismus, 9/1/11–2/28/17

Research to Prevent Blindness, Inc.: RPB Walt and Lily Disney Award for Amblyopia Research, 7/1/14–6/30/19

National Eye Institute (subaward from University of California, Riverside): Integrating Perceptual Learning Approaches into Effective Therapies for Low Vision: 9/1/13–7/31/17

Natik Piri, PhD

Professor of Ophthalmology

Member of the Stein Eye Institute

Retinal Ganglion Cell Biology, Glaucomatous Neurodegeneration, and Neuroprotection

The main directions in Dr. Piri's research are defining the mechanisms leading to retinal ganglion cell (RGC) degeneration in glaucomatous neuropathy; developing strategies for preserving RGCs against neurodegeneration; and identifying and characterizing the genes critical for RGC function and integrity. Different types of RGCs have been identified based on their morphological and physiological characteristics, yet current knowledge of RGC molecular biology is very limited. Characterization of RGC-expressed genes is fundamental to a better understanding of normal RGC physiology and pathophysiology.

Another area of investigation focuses on understanding the degeneration of RGCs and their axons, which is a hallmark of glaucoma. Dr. Piri's laboratory is analyzing retinal gene expression profiles from the glaucoma model with the aim of identifying factors involved in the initiation and execution of RGC apoptosis. Study results have implicated several members of the crystallin superfamily in this process, including alpha crystallins. Dr. Piri is also studying the involvement of oxidative stress and proteins of the thio-redoxin system, particularly in RGC degeneration in the glaucoma model, and the neuroprotective effects of these proteins against glaucomatous RGC death.

Public Service

Editorial Board Member, *Journal of Synthesis Theory and Applications*, *Advances in Medicine: Ophthalmology*, and the *Journal of Neurophysiology and Neurological Disorders*

Reviewer for many scientific journals



Pradeep S. Prasad, MD, MBA

Health Sciences Assistant Clinical Professor
Chief, Division of Ophthalmology, Harbor-UCLA Medical Center
Member of the Stein Eye Institute

Public Service

Ophthalmology Clerkship Director,
UCLA School of Medicine

Vitreoretinal Surgery and Disease Management

Dr. Prasad specializes in the medical and surgical management of diseases of the retina and vitreous. His research is focused on teleretinal screening for diabetic retinopathy, applications of wide-field fundus photography for retinal vascular disease, and health care delivery for low-income populations. Dr. Prasad also serves as the chief of the Division of Ophthalmology at Harbor-UCLA Medical Center where he provides clinical supervision and instruction to UCLA medical students as well as to Stein Eye residents and vitreoretinal fellows.



Roxana A. Radu, MD

Assistant Professor of Ophthalmology

Retina Biochemistry and Clinical Disease Modeling Laboratory

Dr. Radu is a basic science researcher at the Stein Eye Institute. She is a medical doctor who trained as a biochemist during her postdoctoral fellowship at the Institute. The focus of Dr. Radu's laboratory research is studying the formation and pathogenic roles of bisretinoid-pigments (vitamin A condensation products) in the retinas of humans with macular degeneration, such as recessive Stargardt disease (STGD1) and age-related macular degeneration (non-vascularized form). The main aim of this research is to develop and characterize disease models—cell-based and mouse lines—to advance understanding of the pathogenesis of maculopathies and potentially lead to novel therapeutic approaches to treat these blinding diseases. Dr. Radu's group investigates the mechanisms by which ABCA4 mutations result in the STGD1 phenotype, and they explore the bisretinoid-mediated complement dysregulation in the retinal pigment epithelium cells as a key player in visual loss from early and late-onset macular degenerations. Other areas of study include the regulation of the visual cycle for chromophore regeneration by non-visual opsins.

Public Service

Member, Association for Research in Vision and Ophthalmology

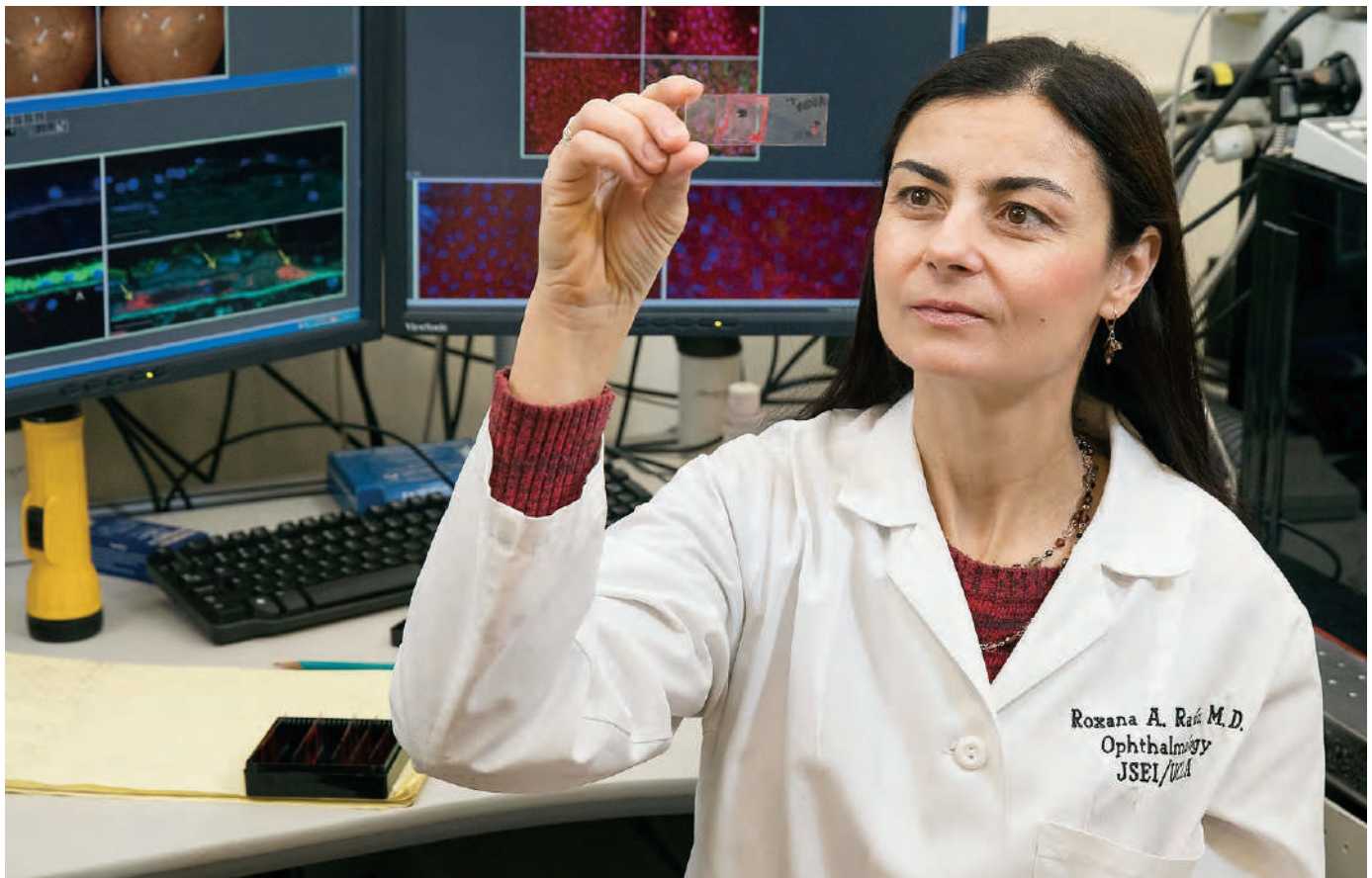
Reviewer for Fight for Sight grant applications in the United States and United Kingdom

Board Member, JSEI Affiliates

Reviewer for many scientific journals

Research Grants

National Eye Institute:
The Role of Complement in
Recessive Stargardt Disease,
8/1/15–7/31/20



Alapakkam P. Sampath, PhD

Professor of Ophthalmology and Neurobiology

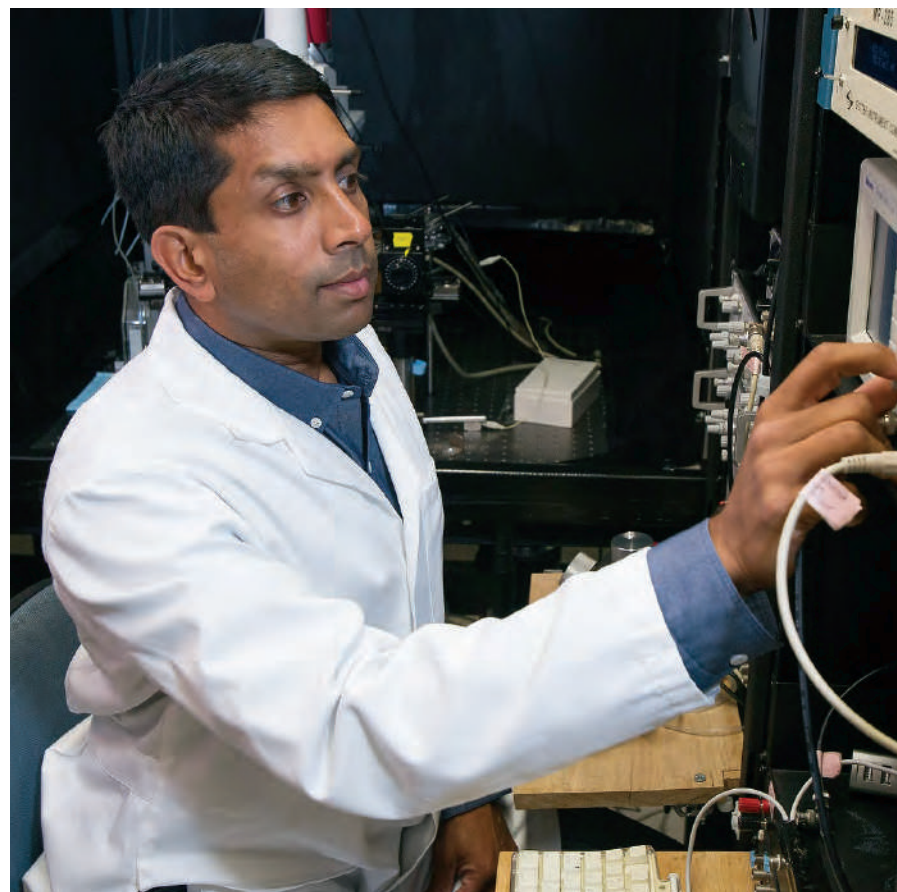
Associate Director of the Stein Eye Institute

Co-Chief of the Vision Science Division

Member of the Stein Eye Institute

Molecular Mechanisms Underlying Early Visual Processing

The Sampath laboratory is interested in understanding the molecular mechanisms underlying early visual processing. In particular, the focus of laboratory researchers has been on elucidating mechanisms that set the sensitivity of night vision. Night blindness, or nyctalopia, is a condition that results from abnormal signaling by the rod photoreceptors, or the retinal circuits that process rod-driven signals. Using physiological and genetic methods, the laboratory studies signal transmission in these retinal rod pathways to identify how these processes are optimized to allow our exquisite visual sensitivity.



Public Service

Member, Association for Research in Vision and Ophthalmology Publications Committee

Member, Neurotransmitters, Transporters, Receptors and Calcium Study Section, NIH

Research Grants

National Eye Institute:
Functional Characteristics of Rod Pathways in the Retina, 2/1/14–7/31/17

National Eye Institute (multi-principal investigator award with Scripps Clinic & Research Foundation):
Molecular Basis of Photoreceptor Wiring, 5/1/17–4/30/22

National Eye Institute (multi-principal investigator award with University of Southern California):
Analyses of Retinal Circuits After Rod Rescue in a Mouse Model of Human Blindness, 9/1/16–8/31/21

National Eye Institute (subaward from University of Southern California):
Experimental and Clinical Investigations of Retinal Stimulation, 10/1/13–12/31/16

National Eye Institute (subaward from University of Michigan):
Experimental and Clinical Investigations of Retinal Stimulation, 3/1/17–2/28/18

David Sarraf, MD

Health Sciences Clinical Professor of Ophthalmology

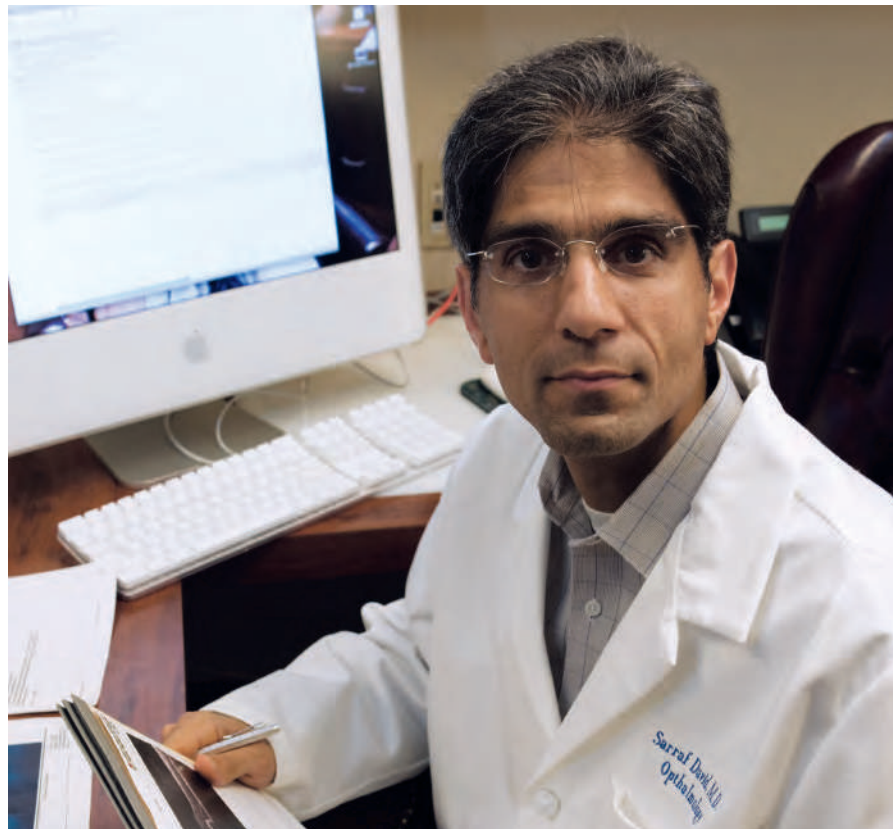
Member of the Stein Eye Institute

Age-Related Macular Degeneration and Retinal Imaging

Dr. Sarraf is a member of the Retinal Disorders and Ophthalmic Genetics Division of the Stein Eye Institute. He has published approximately 200 research papers, case reports, reviews, and book chapters and is co-author of *The Retinal Atlas*, 2nd edition.

Dr. Sarraf's focus of research interest includes the dry and wet forms of age-related macular degeneration (AMD) and specifically the evaluation of pigment epithelial detachment (PED) and retinal pigment epithelial tears. He was nominated to the American Ophthalmological Society because of his research work on the subjects of PED and AMD. Dr. Sarraf leads various national and international trials at UCLA for the diagnosis and treatment of AMD and diabetic retinopathy.

Dr. Sarraf has been awarded achievement and secretariat awards by the American Academy of Ophthalmology, and he is a leader in advanced retinal imaging. He has published extensively in the area of spectral domain optical coherence tomography (SD-OCT) analysis of AMD and other novel and established macular disorders. He was one of the first researchers to describe ischemia of the deep retinal capillary plexus using advanced SD-OCT imaging, and he is a world expert on the clinical application of OCT angiography.



Public Service

Associate Editor, *Retinal Cases and Brief Reports*

Editorial Board Member: *Retina; Ophthalmic Surgery, Lasers and Imaging Retina (OSLI Retina); and Ophthalmology @ Point of Care*

Advisory Board Member: OCT Angiography, Diabetic Retinopathy Clinical Research Network; Optovue, Inc.

Member: American Society of Retinal Specialists, Retina Society, Macula Society, Gass Club, American Ophthalmological Society

Program Committee Member, Macula Society

Co-Director, Pacific Retina Club and International Retinal Imaging Symposium

Co-Founder, International Retinal Imaging Society

Reviewer for many scientific journals

Research Grants

Genentech Inc.: Efficacy and Safety of Lampalizumab Administered Intravitreally to Patients with Geographic Atrophy Secondary to AMD, 11/21/14–9/27/18

Southern California Desert Retina Consultants: Intravitreal Aflibercept Injection for the Treatment of Submacular Vascularized Pigment Epithelial Detachment (EVEN Study), 2/7/13–7/21/16

Allergan Pharmaceutical: Abicipar Pegol in Patients with Neurovascular AMD Sequoia Study, 4/14/16–5/31/20

JAEB Center for Health Research: Intravitreal Anti-VEGF Treatment for Prevention of Vision Threatening Diabetic Retinopathy, 8/1/16–7/31/21

Regeneron Pharmaceuticals, Inc.: Microvascular Structure and Morphology of Neovascular Membranes in AMD, 3/28/17–3/28/20

Regeneron Pharmaceuticals, Inc.: Efficacy, Safety, and Tolerability of Repeated Doses of Intravitreal REGN910-3 in Patients with Neovascular AMD, 9/8/16–9/8/19

Genentech, Inc.: Long-Term Safety and Tolerability of Lampalizumab in Patients with Geographic Atrophy Secondary to AMD, 11/16/16–11/16/19

JAEB Center for Health Research: DRCR Funding Addendum, 6/13/17–12/31/18

JAEB Center for Health Research: Diabetic Retinopathy Clinical Research Network, 6/13/17–12/31/18

Steven D. Schwartz, MD

The Ahmanson Chair in Ophthalmology

Professor of Ophthalmology

Chief of the Retina Division

Director of the UCLA Diabetic Eye Disease and Retinal Vascular Center

Director of the Macula Center

Member of the Stein Eye Institute

Stem Cell Research

Dr. Schwartz is leading two new clinical trials testing the use of stem cell-derived retinal pigment epithelial cells to address vision loss in people suffering from Stargardt macular dystrophy and dry age-related macular degeneration.

Retinal Diseases

Dr. Schwartz's primary areas of research include early diagnosis and treatment of diseases such as retinopathy of prematurity (ROP), diabetic eye disease, and macular degeneration. Additionally, his focus includes development and evaluation of novel medical device technologies, imaging technologies, surgical equipment (including surgical robots), and drug-delivery systems, with particular emphasis on diagnostic and treatment applications. Dr. Schwartz's clinical research focuses on trials of novel pharmacotherapeutic agents to discover treatments for both wet and dry age-related macular degeneration, ROP, and diabetic retinopathy.

Through innovative teleophthalmological approaches to screen for eye diseases, such as diabetic retinopathy and ROP, Dr. Schwartz is dedicated to improving both the quality of and access to specialized ophthalmology care. Currently, a collaborative program with UCLA's Gonda Diabetes Center and Venice Family Clinic is underway,

in which screening for diabetic retinopathy is conducted with a nonmydriatic camera (a camera that does not require dilation of the eyes) as part of each patient's regular diabetes treatment. Results are telecommunicated to specialists at the Stein Eye Institute for interpretation and further action.



Public Service

Program Committee Member, Association for Research in Vision and Ophthalmology

Diabetic Eye Disease Screening, Venice Family Clinic

Research Grants

Astellas Institute for Regenerative Medicine (formerly Advanced Cell Technology and Ocata Therapeutics): Study to Determine the Safety and Tolerability of Subretinal Transplantation...in Patients with Stargardt Macular Dystrophy, 3/23/11–1/10/18

Astellas Institute for Regenerative Medicine: Study to Determine the Safety and Tolerability of Subretinal Transplantation...in Patients with Advanced Dry AMD, 4/5/11–6/27/18

Ocata Therapeutics (formerly Advanced Cell Technology): Study to Determine the Safety and Tolerability of Subretinal Transplantation...in Patients with Geographic Atrophy Secondary to Myopic Macular Degeneration, 4/10/14–9/1/16

Neurotech Pharmaceuticals, Inc.: Phase I Multicenter Open Label Safety and Tolerability Clinical Trial of Ciliary Neurotrophic Factor (CNTF) in Patients with Macular Telangiectasis Type 2, 7/19/11–7/18/17

Genentech, Inc./Hoffman La Roche Inc.: Study to Assess the Efficacy and Safety of Lampalizumab Administered Intravitreally to Patients with Geographic Atrophy Secondary to ARMD, 11/18/14–9/27/18

Astellas Institute for Regenerative Medicine: Study to Evaluate Systemic Immunosuppression Regimens as Graft Rejection Prophylaxis Following Subretinal Transplantation of Human Embryonic Stem Cell Derived Retinal Pigmented Epithelial Cells in Patients with Geographic Atrophy Secondary to ARMD, 10/7/15–10/7/17

Genentech, Inc.: A Multicenter, Prospective Epidemiologic Study of the Progression of Geographic Atrophy Secondary to AMD, 10/18/16–8/1/20

Genentech, Inc.: Study to Evaluate the Long-Term Safety and Tolerability of Lampalizumab in Patients with Geographic Atrophy Secondary to AMD, 10/27/16–10/27/19

Hoffman-La Roche Inc./Roche Molecular Systems, Inc.: Study to Investigate the Safety, Tolerability, Pharmacokinetics and Efficacy of R06867461 Administered Intravitreally in Patients with Diabetic Macular Edema, 10/18/16–10/18/19

Hui Sun, PhD

Professor of Physiology and Ophthalmology
Member of the Stein Eye Institute

Molecular Mechanism of Vitamin A Transport for Vision; Identification of New Therapeutic Targets for Blinding Diseases

Dr. Sun's laboratory studies the molecular mechanism of vitamin A transport for vision and new therapeutic targets for blinding diseases. Vitamin A is essential for vision because it is the precursor for the chromophore of photoreceptor proteins and also plays critical roles in eye development. Plasma retinol binding protein (RBP) is the principal carrier of vitamin A in the blood. Dr. Sun's laboratory identified the long-sought RBP receptor, which functions simultaneously as a membrane receptor and a membrane transporter that mediates cellular uptake of vitamin A. His laboratory is using a variety of techniques to study this membrane transport system.

Dr. Sun's lab is also identifying new therapeutic targets. Specifically, his lab identified new factors that protect cone photoreceptor cells and is testing these factors in vivo in collaboration with Dr. Xian-Jie Yang's lab. A second project is studying the newly identified membrane receptors for a factor that has broad therapeutic value in treating diverse cancer types and blinding diseases, such as diabetic retinopathy, ischemia-induced retinopathy, and age-related macular degeneration. In addition to studying the signaling mechanism, Dr. Sun's lab has developed an innovative screening technique that allows the identification of chemical compounds that specifically target the receptors of this therapeutic factor and mimic its function in vitro and in vivo. These compounds are potential first-in-class medicine to treat major human blinding diseases.

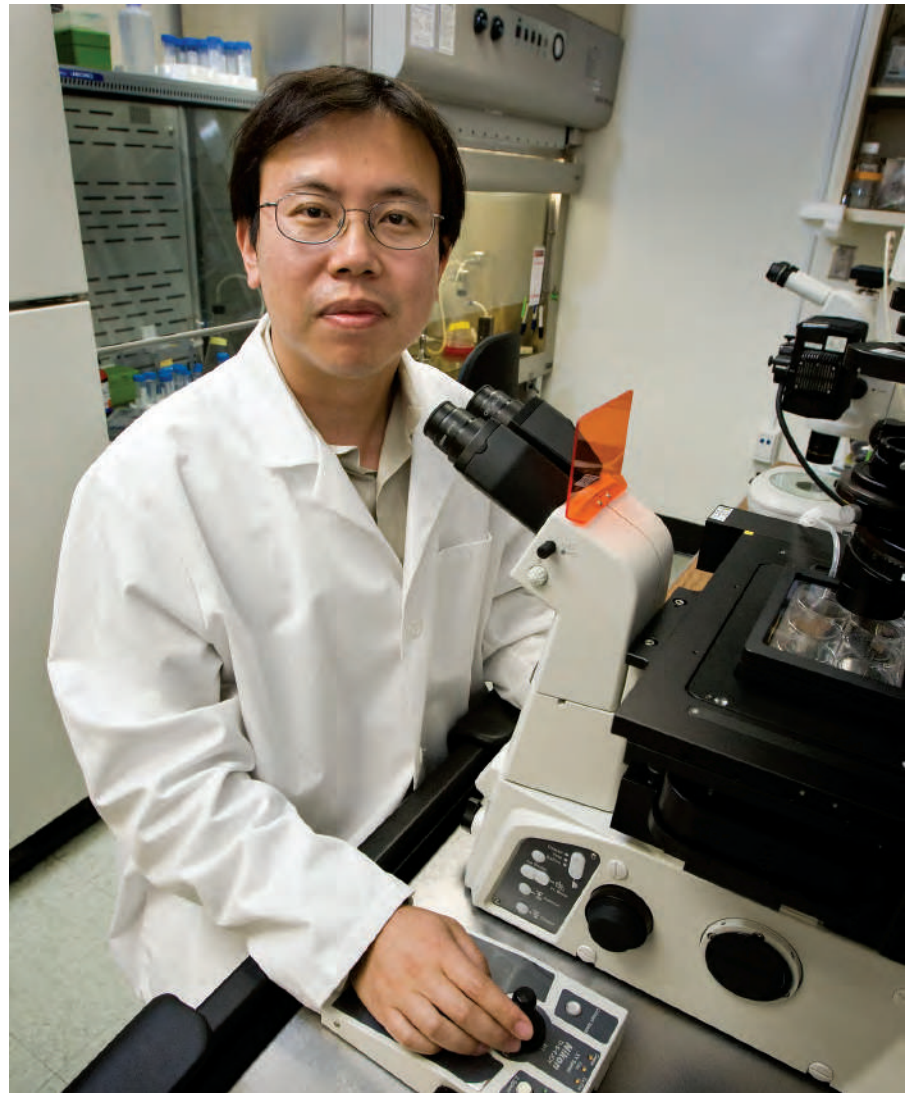
Public Service

Ad hoc reviewer for NIH/NEI
Special Emphasis Panels

Ad hoc reviewer for Natural Sciences
and Engineering Research Council,
Canada

Research Grants

National Eye Institute: Molecular
Mechanism of Vitamin A Uptake for
Vision, 12/1/13–11/30/17



Gabriel H. Travis, MD

Charles Kenneth Feldman Chair in Ophthalmology

Professor of Ophthalmology

Co-Chief of the Vision Science Division

Biochemistry of Vertebrate Photoreceptors and Mechanisms of Retinal Degeneration

Dr. Travis' laboratory uses biochemical and genetic approaches to study the visual cycle and its role in retinal and macular degenerations. Vision in vertebrates is mediated by two types of light-sensitive cells: rods and cones. These cells contain light-detecting molecules called opsin pigments. Detection of a single light particle bleaches the opsin pigment. Restoring light sensitivity to a bleached opsin involves an enzymatic pathway called the visual cycle. Mutations in the genes for many proteins of the visual cycle cause inherited blinding diseases.

One project in Dr. Travis' laboratory studies the function of a transporter protein in rods and cones called *ABCA4*. Mutations in the human *ABCA4* gene cause recessive Stargardt macular degeneration and cone-rod dystrophy. Dr. Travis' group generated mice with a null mutation in this gene. Biochemical analysis of the phenotype in these *ABCA4* "knock-out" mice led them to the function of *ABCA4* in photoreceptors, and the biochemical etiology of Stargardt disease. This understanding suggested a pharmacological strategy to reverse the biochemical defect in patients with Stargardt disease and age-related macular degeneration. A phase II clinical trial is currently underway to test a drug based on this strategy as a treatment for age-related macular degeneration.

Another ongoing project in Dr. Travis' laboratory characterizes Rpe65, which catalyzes the critical isomerization step in the visual cycle. Previously, Dr. Travis and co-workers identified Rpe65 as the retinoid isomerase.

Still another project in Dr. Travis' laboratory concerns the mechanism of visual-pigment regeneration in cone photoreceptors. Despite the importance of cones, little is known about how visual pigments are replenished to permit sustained vision under daylight conditions. Recent results from Dr. Travis' group point to the existence of a new enzymatic pathway for regenerating visual pigments in cones. His group is currently working to purify and clone the enzymes that define this new biochemical pathway.



Public Service

Scientific Advisory Panel Member,
The Karl Kirchgessner Foundation
Vision Science Program

Grant Reviewer, National Institutes of
Health, the Biology and Diseases of
the Posterior Eye Study Section

Reviewer, Howard Hughes Medical
Institute Investigators

Reviewer for many scientific journals

Research Grants

Bruce Ford and Anne Smith Bundy
Foundation: Instrumentation Grant
for Stein Eye Investigators,
8/16/11–8/15/17

National Eye Institute: The Role of
Müller Cells in Visual Pigment
Regeneration, 7/1/15–6/30/18

National Eye Institute: Vision Science
Training Grant for the Stein Eye
Institute (Principal Investigator),
9/30/11–9/29/17

National Eye Institute: Functional
Characterization of RGR-OPSIN in
Retinal Müller Cells, 9/1/15–8/31/18

Irena Tsui, MD

Assistant Professor of Ophthalmology
Member of the Stein Eye Institute

Clinical Vitreoretinal Research

Dr. Tsui's research focuses on improving clinical outcomes in patients with retinal diseases. Her areas of interest include retinopathy of prematurity, diabetic retinopathy, ultra-wide field imaging, surgical techniques, and studying patient-centered outcomes in veterans.

In addition to providing patient care at the Stein Eye Institute in Westwood, Dr. Tsui also sees patients at the Doheny Eye Center UCLA–Arcadia.

Public Service

Committee Member, UCLA Women in Medicine and Science

Care Harbor LA Free Clinic

Reviewer for many scientific journals

Research Grants

National Eye Institute:
Ophthalmic Manifestations of Congenital Zika Virus Infection, 3/1/17–2/28/19

Novartis Pharmaceuticals:
A Randomized Controlled Study Evaluating the Efficacy and Safety of RAnibizumab Compared with Laser Therapy for the Treatment of INfants BOrn Prematurely with Retinopathy of Prematurity (RAINBOW Study), 4/3/17–7/31/18



Federico G. Velez, MD

Health Sciences Associate Clinical Professor of Ophthalmology

Member of the Stein Eye Institute

Strabismus and Childhood Eye Disorders

Dr. Velez's primary research interest is studying the mechanisms of congenital and acquired forms of strabismus. He has participated in the development of guidelines for preoperative assessment and surgical approaches to patients with convergent (esotropia), divergent (exotropia), and vertical forms of strabismus, and has developed new techniques to treat pediatric patients with eyelid abnormalities and cataracts.

Dr. Velez has recently completed studies that apply bioengineering technology to the correction of ocular motility disorders. He has also identified a new ocular motility disorder in patients with the human immunodeficiency virus. He provides patient care at the Stein Eye Institute in Westwood and the Doheny Eye Center UCLA-Orange County.



Honors

Presented the William E. Scott Lecture at the University of Iowa on March 20, 2017, in Iowa City, Iowa.

Gave the keynote lecture at the Brazilian Council of Strabismus on May 20, 2017, in São Paulo, Brazil.

Public Service

Vice-Chair, Adult Strabismus Committee, *American Association of Pediatric Ophthalmology and Strabismus*

Editorial Board Advisory Panel Member, Treatment Strategies—Pediatrics, The Cambridge Research Centre

Editorial Board Member, *Journal of the American Association of Pediatric Ophthalmology and Strabismus*, and *Journal of the Colombian Society of Ophthalmology*

Member, American Academy of Ophthalmology, American Association for Pediatric Ophthalmology and Strabismus, Latin American Council of Strabismus, Latin American Pediatric Ophthalmology Society, Colombian Society of Ophthalmology, and Colombian Society of Pediatric Ophthalmology and Strabismus

Reviewer for many scientific journals

Research Grants

Omeros Inc.: A Randomized, Double-Masked, Parallel-Group, Phenylephrine-Controlled Study of the Effect of OMS302 Added to Standard Irrigation Solution on Intraoperative Pupil Diameter and Acute Postoperative Pain in Children Ages Birth Through Three Years Undergoing Unilateral Cataract Extraction with or Without Lens Replacement, 8/6/15–8/6/17

Bausch and Lomb: A Randomized, Multicenter, Double Masked, Parallel-Group Study Assessing the Safety and Efficacy of Loteprednol Etabonate Ophthalmic Gel, 0.5% Versus Prednisolone Acetate Ophthalmic Suspension, 1% for the Treatment of Intraocular Inflammation Following Surgery for Childhood Cataract, 9/17/15–9/17/17

Retrophin, Inc.: An Observational, Multicenter Study of the Prevalence of Cerebrotendinous (CTX) in Patient Population Diagnosed with Early-Onset Idiopathic Bilateral Cataracts, 1/6/16–1/5/18

David S. Williams, PhD

Professor of Neurobiology

Member of the Stein Eye Institute

Cell Biology of the Retina and Inherited Retinal Disease

Dr. Williams' laboratory focuses on the cell biology of photoreceptor and retinal pigment epithelium cells. His group is especially interested in proteins that function in transport and compartmentalization within these cells. These proteins include those that underlie Usher syndrome and macular degeneration. Translational areas of his research involve gene therapy experiments aimed at preventing the blindness that ensues from Usher syndrome type 1B and studies on stem cell-derived RPE cells, which may be transplanted into retinas afflicted by macular degeneration.

Public Service

NIH Biology of the Visual System (BVS) Study Section

NEI Board of Scientific Counselors

Executive Committee, Beckman-Argyros Award in Vision Research

Scientific Advisory Board Member, Foundation Fighting Blindness

Executive Board Member, Sustainability Council of New Zealand

Co-Chair, Federation of American Societies for Experimental Biology (FASEB) Summer Conference on Biology and Chemistry of Vision

Research Grants

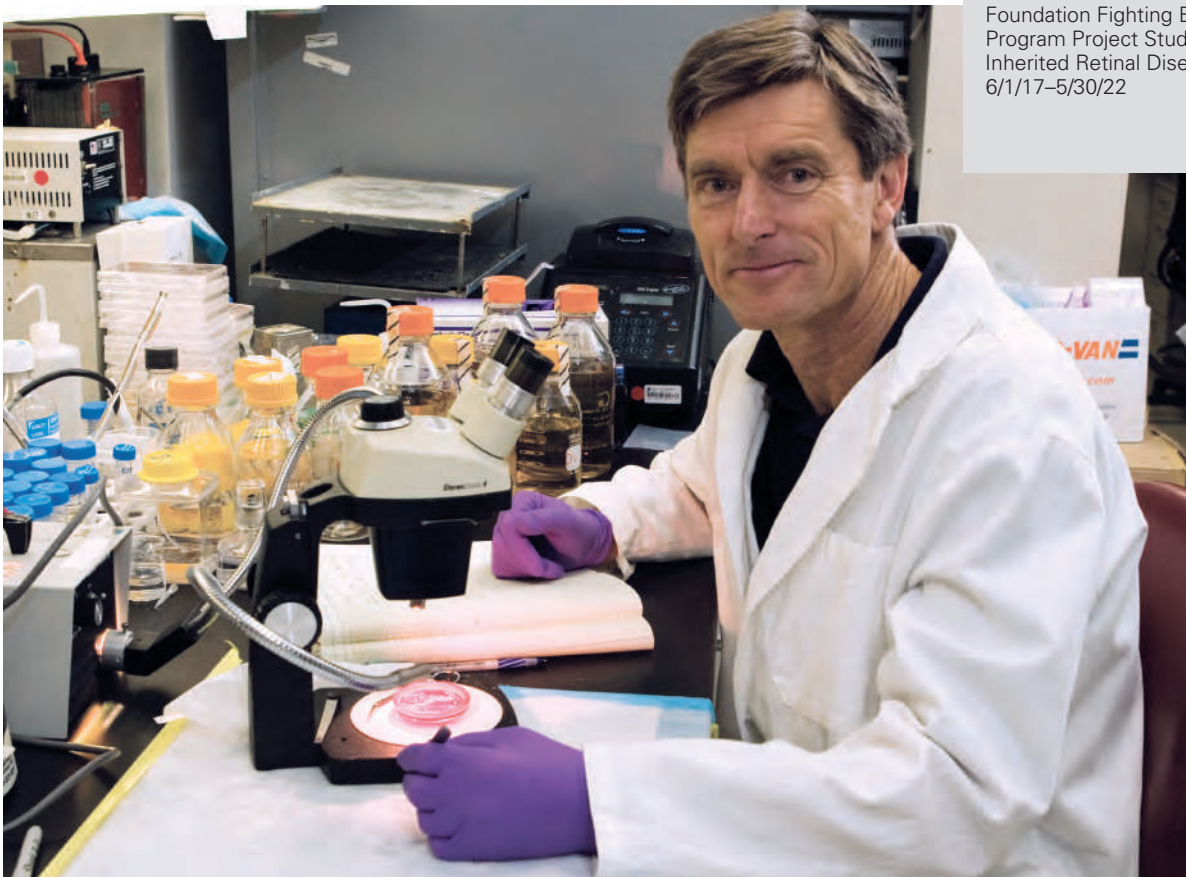
National Eye Institute:
The Photoreceptor Cilium,
5/1/13–4/30/18

National Eye Institute (subaward from the University of California, Santa Barbara): Photoreceptor Disk Membrane Morphogenesis,
4/1/15–3/31/18

National Eye Institute:
Stein Eye Institute Core Grant for Vision Research, 9/1/15–6/30/20

Foundation Fighting Blindness:
Gene Editing of the Usher 1B Gene,
6/1/17–5/30/20

Foundation Fighting Blindness:
Program Project Studies on Inherited Retinal Disease,
6/1/17–5/30/22



Xian-Jie Yang, PhD

Ernest G. Herman Chair in Ophthalmology

Professor of Ophthalmology

Member of the Stein Eye Institute

Development and Disease Therapy of the Retina

Dr. Yang's laboratory studies the molecular and cellular mechanisms underlying retinal development and repair. Blinding diseases such as retinitis pigmentosa, geographic atrophy, and glaucoma involve the permanent loss of photoreceptors or retinal ganglion cells. A potential treatment strategy is to supply diseased retinas with protective agents that can prolong neuronal survival. One area of current research focus in the Yang laboratory is to understand how certain growth factors enhance neuronal viability under retinal degeneration conditions. These investigations use genetic and biochemical approaches to dissect cellular events triggered by growth factor treatments in disease models, thus providing insight into clinical application of neuroprotective therapies for patients afflicted with retinal degenerative diseases. Another major research direction of the Yang laboratory is to enable stem cell-based derivation of human retinal organoids in culture and to induce differentiation of retinal neurons, especially retinal ganglion cells. These studies utilize cutting-edge stem cell technologies and apply known developmental regulatory principles to establish in vitro models of human retinogenesis. Outcomes of the research will provide stem cell-based tools to study human retinal differentiation and diseases, and opportunities to develop new therapeutic treatments.



Public Service

Grant Reviewer (US),
National Institutes of Health;
National Science Foundation

Grant Reviewer (foreign), Medical
Research Council and Wellcome Trust
in the United Kingdom; Research Grant
Council of Hong Kong; Israel Science
Foundation; Biomedical Research
Council of Singapore; National Science
Foundation of China

Editorial Board Member, *Visual
Neuroscience*, *Translational Vision
Science & Technology*, *Signal
Transduction and Targeted Therapy*

Reviewer for many scientific journals

Research Grants

National Eye Institute, Neuroprotection
Mechanism for Photoreceptors,
5/1/16–4/30/21

Jie J. Zheng, PhD

Professor of Ophthalmology

Member of the Molecular Biology Institute

Member of the Jonsson Comprehensive Cancer Center

Member of the Stein Eye Institute

Therapeutic Development in Ophthalmology

Dr. Zheng's research is at the interface of biochemistry, computational biology, systems pharmacology, and drug discovery with an emphasis on therapeutic development in ophthalmology. Taking advantage of increasing computer capability, Dr. Zheng's research group finds that the combination of experimental and computational studies gives them a unique strength, and on the basis of this strength, Dr. Zheng's laboratory has achieved great successes.

The current focus of the laboratory is to develop proteins and small molecules that can modulate signal transduction pathways, such as Wnt, Hedgehog, BMP, and Hippo pathways, in an effort to better understand the biological functions of these signaling pathways and to explore the therapeutic potential of these compounds and proteins. Aiming to establish new translational research within the vision research community at UCLA, the goal of Dr. Zheng's research is to develop novel therapies for retinal degenerative diseases, glaucoma, and corneal disorders.

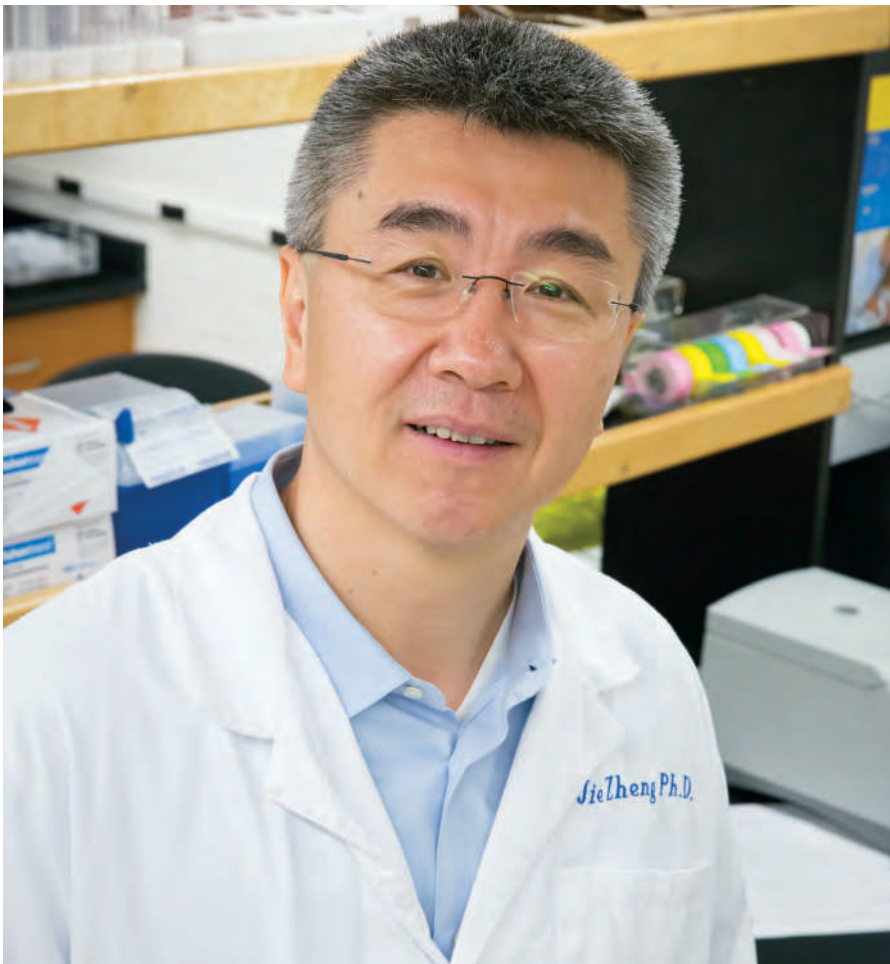
Public Service

Member, Professional Development and Education Committee,
The Association for Research in Vision and Ophthalmology (ARVO)

Editorial Board Member,
Cell Communication and Signaling

Research Grants

National Institute of General Medical Sciences: R01 GM100909,
Structural Investigation of Focal Adhesion Formation, and Disassembly,
5/1/2012–3/31/2017



Faculty, Doheny Eye Center UCLA

Through the historic alliance between the UCLA Stein Eye Institute and the Doheny Eye Institute, Doheny physician-scientists are UCLA Department of Ophthalmology faculty members.

The affiliation introduced the Doheny Eye Center UCLA, which provides comprehensive eye care covering the full disease spectrum. The Doheny Eye Center UCLA locations in Arcadia, Orange County, and Pasadena offer neighborhood convenience for patients and community ophthalmologists, as well as being a resource for local physicians who need to refer patients for ophthalmic care.



Vikas Chopra, MD

Health Sciences
Associate Clinical Professor

Medical Director,
Doheny Eye Center UCLA–Pasadena

Glaucoma

Specializing in glaucoma, Dr. Chopra's research activities include advanced optic nerve and retinal nerve fiber layer imaging for early glaucoma detection, as well as development and validation of novel parameters for use in anterior segment optical coherence tomography devices as principal investigator at the Doheny Image Reading Center. Dr. Chopra also evaluates laser and surgical techniques for the management of glaucoma.

Dr. Chopra provides patient care at the Doheny Eye Center UCLA locations in Arcadia and Pasadena.

Honors

Awarded Best Research Paper in the Glaucoma Session at the October 2016 American Academy of Ophthalmology meeting in Chicago, Illinois.



Brian A. Francis, MD, MS

Health Sciences Clinical Professor

Rupert and Gertrude Stieger
Endowed Chair in Vision Research

Director of Glaucoma Services,
Doheny Eye Center UCLA

Medical Director, Doheny Eye Center
UCLA–Orange County

Glaucoma

Dr. Francis' clinical specialties are glaucoma and complex cataract. His research activities include: innovative glaucoma surgeries, minimally invasive glaucoma surgery, novel visual field techniques, glaucoma diagnostic and functional imaging, anterior segment imaging (ultrasound biomicroscopy and Fourier domain optical coherence tomography), and glaucoma laser surgery.

Dr. Francis sees patients at the Doheny Eye Center UCLA locations in Arcadia, Orange County, and Pasadena.

Research Grants

Diopsys Inc.: Study for Benchmarking the Management of Ophthalmic Diseases Using the Diopsys Visual Evoked Potential/Pattern ERG/ERG Protocol, 2/21/16–1/31/18



Gad Heilweil, MD

Health Sciences
Assistant Clinical Professor

Degenerative Retinal Disease

Dr. Heilweil's research activities include stem-cell therapy for degenerative retinal disease; retinal and uveal drug toxicity; and pharmacokinetics of intravitreal drugs.

In addition to providing patient care at the Stein Eye Institute in Westwood, Dr. Heilweil also sees patients at the Doheny Eye Center UCLA locations in Arcadia, Orange County, and Pasadena.



Hugo Y. Hsu, MD

Health Sciences
Associate Clinical Professor

Cornea and External Diseases

Dr. Hsu specializes in corneal infection and inflammation, corneal transplantation, anterior segment reconstruction, and cataract surgery. His research interests include corneal and ocular infections and ophthalmic antibiotics.

Dr. Hsu sees patients at the Doheny Eye Center UCLA locations in Arcadia, Orange County, and Pasadena.



Dr. Bartly Mondino (center) with UCLA Department of Ophthalmology faculty members serving the Doheny Eye Center UCLA offices in Arcadia, Orange County, and Pasadena.



Alex A. Huang, MD, PhD

Assistant Professor of Ophthalmology

Glaucoma

Dr. Huang's clinical specialties include glaucoma, minimally invasive glaucoma surgery, trabeculectomy, glaucoma drainage devices, cyclodestruction, and complex cataracts. His research activities involve characterizing post-trabecular meshwork and scleral changes in glaucoma, optical coherence tomography visualization of aqueous humor outflow pathways in the eye, and angiographic visualization of aqueous humor outflow in the eye. His goal is to provide the most individualized care, and through the use of research, develop means to customize glaucoma management and surgery for each patient.

Dr. Huang provides patient care at the Doheny Eye Center UCLA–Pasadena.

Honors

Ranked #1 as "Ophthalmology's Top 50 Rising Stars" in *The Ophthalmologist* Power List 2017.

Research Grants

National Eye Institute: Discovery and Characterization of Anterior Scleral Pathology in Glaucoma, 9/30/14–9/29/19

National Space Biomedical Research Institute (subaward from Baylor College of Medicine): Validation of a Cephalad Fluid Shift Countermeasure, 6/1/15–5/31/17

Research to Prevent Blindness: RPB Career Development Award, 1/1/16–12/31/19

Glaukos Corporation: Glaucoma Research (Outflow Imaging), 10/27/15–6/30/17

American Glaucoma Society: Young Clinician Scientist Award, 5/18/15–3/18/17

KBR Wyle: Autonomous Diagnostic Imaging Performed by Untrained Operators Using Augmented Reality as a Form of "Just-in-Time" Training, 5/26/17–5/31/17



Michael S. Ip, MD

Professor of Ophthalmology

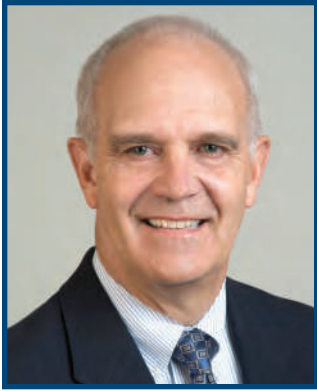
Vitreoretinal Disease

Dr. Ip's research focuses on the design and conduct of clinical trials investigating treatments for diabetic retinopathy, age-related macular degeneration, and retinal venous occlusive disease. He has served as the national director for numerous National Eye Institute funded ophthalmic clinical trials. Additionally, as director of the Doheny Image Reading Center, Dr. Ip assists with the collection, analysis, and dissemination of important secondary outcomes in many important clinical trials in the field of ophthalmology.

Dr. Ip sees patients at the Doheny Eye Center UCLA–Pasadena.

Research Grants

National Eye Institute (subaward from Penn State University): Studies of Comparative Treatments in Retinal Vein Occlusion 2 (SCORE 2), 6/16/16–3/31/19



John A. Irvine, MD

Health Sciences
Clinical Professor

Medical Director,
Doheny Eye Center UCLA

Cornea and External Diseases

Dr. Irvine’s clinical specialties are cornea and external diseases (eg, tumors, infections), anterior segment surgical consultation, and prosthetic replacement of the ocular surface ecosystem (PROSE). His research activities focus on ocular infections.

Dr. Irvine provides patient care at the Doheny Eye Center UCLA locations in Arcadia, Orange County, and Pasadena.



M. Ali Khan, MD

Assistant Professor of Ophthalmology

Vitreoretinal Disease

Dr. Khan specializes in the medical and surgical treatment of vitreoretinal disease, and his research interests include proliferative vitreoretinopathy, diabetic retinopathy, and retinal imaging modalities.

Dr. Khan sees patients at the Doheny Eye Center UCLA locations in Arcadia, Orange County, and Pasadena.

Honors

Received 1st place in
Ophthalmology Times 2016
MD Writer’s Award Program
Competition.



Olivia L. Lee, MD

Health Sciences
Assistant Clinical Professor

Cornea/External Diseases and Uveitis; Corneal Imaging

Focusing on cornea/external diseases and uveitis, Dr. Lee’s particular interest is in inflammatory ocular surface disease, corneal melts, pterygia, and anterior segment complications of uveitis. Dr. Lee performs all types of corneal transplants, as well as complex cataract surgery in uveitic eyes.

Dr. Lee’s research interests are anterior segment imaging applied to the tear film, cornea, and conjunctiva. With her expertise in corneal imaging, a specular microscopy reading center was developed at the Doheny Image Reading Center, where she serves as an investigator.

Dr. Lee provides patient care at the Doheny Eye Center UCLA locations in Arcadia, Orange County, and Pasadena.



The Doheny Eye Center UCLA–Orange County, located at the Orange Coast Memorial Medical Center, provides comprehensive ophthalmology and subspecialty services.



Kenneth L. Lu, MD

Health Sciences
Assistant Clinical Professor

Medical Director,
Doheny Eye Center UCLA–Arcadia

Cataract and Refractive Surgery

Dr. Lu specializes in cataract and refractive surgery, and his research activities are focused in the same areas.

Dr. Lu sees patients at the Doheny Eye Center UCLA–Arcadia.



Peter A. Quiros, MD

Health Sciences
Associate Clinical Professor

Neuro-Ophthalmology

Specializing in neuro-ophthalmology, the clinical specialties of Dr. Quiros are: optic nerve disease, including optic neuritis and multiple sclerosis; double vision and adult strabismus; eye pain, headache, and idiopathic intracranial hypertension; Graves disease; orbital inflammatory syndromes; and stroke. Dr. Quiros' research activities include idiopathic intracranial hypertension, headache, ocular myasthenia gravis, Graves disease, optic neuritis and multiple sclerosis, and visual rehabilitation after stroke. Dr. Quiros was the principal investigator for the recently completed idiopathic intracranial hypertension treatment trial and is currently the principal investigator for the longitudinal idiopathic intracranial hypertension treatment trial. Dr. Quiros is also a member of the Neuro-Ophthalmology Researcher and Disease Investigators Consortium (NORDIC) and is the local NORDIC director.

Dr. Quiros provides patient care at the Doheny Eye Center UCLA locations in Orange County and Pasadena.

Research Grants

Quark Pharmaceuticals, Inc.:
A Phase 2/3, Randomized Double-Masked, Sham-Controlled Trial of QPI-1007 Delivered by Single or Multi-Dose Intravitreal Injection(s) to Subjects with Acute Nonarteritic Anterior Ischemic Optic Neuropathy (NAION), 8/4/16–8/4/19



Daniel B. Rootman, MD, MS

Assistant Professor of Ophthalmology

Orbit and Ophthalmic Plastic Surgery

Dr. Rootman is an orbit and ophthalmic plastic surgery specialist. His clinical expertise includes Graves disease, orbital surgery, orbital tumors, ptosis, lacrimal disorders, blepharoplasty, blepharospasm, Botox®, cosmetic dermal fillers, endoscopic eyebrow lift, eyelid surgery, eyelid tumors, and trauma. Research activities are on developing and refining patient-centered outcome measures for surgical care; randomized clinical trials in surgery, including ptosis, Graves orbitopathy and lacrimal disease; health economics of eyelid and facial surgery; sociodemographics of facial trauma; physiology and pathobiology of ptosis; new approaches to surgery; and measurement and assessment in medical education.

Dr. Rootman sees patients at the Stein Eye Institute in Westwood, as well as the Doheny Eye Center UCLA locations in Orange County and Pasadena.

Research Grants

Galderma Laboratories L.P.: Hyaluronic Acid Gels for Upper Lid Retraction in Thyroid Eye Disease, 6/8/16–10/8/17



SriniVas R. Sadda, MD

Professor of Ophthalmology

President and Chief Scientific Officer,
Doheny Eye Institute

Retinal and Macular Diseases

Dr. Sadda specializes in age-related macular degeneration, hereditary retinal degenerations, diabetic retinopathy, venous occlusive disease, telemedicine screening and consultation programs, as well as retinal disease diagnosis and classification. His research activities include: quantitative, automated retinal image analysis; retinal substructure assessments; advanced retinal imaging technologies; genotype-phenotype correlative studies; and vision restoration technologies, such as stem cells and prosthetic vision.

Dr. Sadda provides patient care at the Doheny Eye Center UCLA locations in Arcadia and Pasadena.

Honors

Received a Senior Achievement Award at the October 2016 American Academy of Ophthalmology annual meeting in Chicago, Illinois.

Presented the Paul Henkind Memorial Lecture and received the Paul Henkind Award at the 40th Annual Macula Society Meeting on June 8, 2017, in Singapore.



Research Grants

Allergan Pharmaceutical Corp:
Safety and Efficacy of Abicipar Pegol (AGN-150998) in Patients with Neovascular Age-Related Macular Degeneration CEDAR Study, 3/8/16–5/31/20

Research to Prevent Blindness, Inc. (Sears, Connie): Re-engineering the Screening and Staging of Diabetic Retinopathy, 1/1/17–12/31/17

Macula Vision Research Foundation: Multimodal Image Analysis in Age-Related Macular Degeneration, 1/1/15–12/31/17

National Eye Institute: Advanced Retinal Image Analysis for AMD Screening, 8/1/15–7/31/16

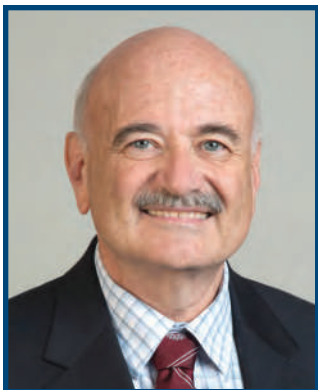
National Eye Institute: High Resolution Retinal Imaging by Fourier Ptychography, 4/4/16–3/31/18

National Eye Institute: Genetic Epidemiology of Age-Related Macular Degeneration in the Older Order Amish, 2/1/13–1/31/18

National Center for Advancing Translational Sciences: Automated Image-Based Biomarker Computation Tools for Diabetic Retinopathy, 9/26/14–6/30/17

National Eye Institute: Advanced Image Analysis Tools for Diabetic Retinopathy Telemedicine Application, 8/1/16–7/31/18

The Doheny Eye Center UCLA–Arcadia serves patients in the broader Arcadia region and San Gabriel area.



Alfredo A. Sadun, MD, PhD

Flora Thornton Chair of
Vision Research

Vice Chairman of Ophthalmology
for Doheny Eye Center UCLA

Professor of Ophthalmology

Neuro-Ophthalmology

Clinical specialties of Dr. Sadun include neuro-ophthalmology, optic nerve, optic neuropathies (eg, posterior ischemic optic neuropathy, anterior ischemic optic neuropathy, and traumatic optic neuropathy), Leber hereditary optic neuropathy, toxic and nutritional optic neuropathies, vision in Alzheimer's, AIDS, and other central nervous system disorders. Dr. Sadun's research activities focus on human visual neuroanatomy; retinal ganglion cell degeneration and regeneration; axon populations in the human optic nerve in development, aging, and disease; and mitochondrial impairments as a cause of optic neuropathy and other forms of neurodegeneration.

Dr. Sadun sees patients at the Doheny Eye Center UCLA–Pasadena.

Honors

Presented the keynote address in neuro-ophthalmology at the European Ophthalmological Society annual meeting on June 13, 2017, in Barcelona, Spain.

Gave the Distinguished Alumnus Lecture at the Massachusetts Eye and Ear Infirmary annual meeting on June 24, 2017, in Boston, Massachusetts.

Research Grants

Edison Pharmaceuticals, Inc.:
Emergency Administration of EPI-743
to a Single Patient with Leber's
Hereditary Optic Neuropathy (LHON),
10/17/14–8/23/17

Gensight Biologics: A Randomized,
Double-Masked, Sham-Controlled,
Pivotal Clinical Trial to Evaluate the
Efficacy of a Single, Intravitreal
Injection of GS010 (RAAV2/2-ND4) A,
1/11/16–1/11/18

Gensight Biologics: A Randomized,
Double-Masked, Sham-Controlled,
Pivotal Clinical Trial to Evaluate the
Efficacy of a Single, Intravitreal
Injection of GS010 (RAAV2/2-ND4) B,
1/12/16–1/12/18

Stealth Biotherapeutics Inc.: A
Prospective, Randomized, Double-
Masked, Vehicle Controlled, Phase 2
Clinical Study to Evaluate the Safety,
Tolerability, and Efficacy of MTP-131
TOPI, 2/12/16–2/12/18

Children's Hospital of Philadelphia:
Psychological and Environmental
Effectors of mtDNA Disease Penetrance,
10/1/16–9/30/17



Deming Sun, MD

Professor of Ophthalmology

Research Scientist

Dr. Sun is a researcher whose primary areas of investigation include uveitis, autoimmune diseases, optic neuritis, animal disease models, and T-cell biology.

Research Grants

National Eye Institute: Regulation by
GammaDelta T Cells of Autoimmune
Uveitis, 5/1/12–4/30/16

National Eye Institute: Role of IL-17+
Autoreactive T Cells in Experimental
Autoimmune hUveitis (EAU),
9/1/09–7/31/19



James C. Tan, MD, PhD

Associate Professor of Ophthalmology

Glaucoma

Dr. Tan is a dual fellowship-trained glaucoma specialist. He treats the full spectrum of cataract and glaucoma conditions, ranging from mild to complex. His treatments and surgeries focus on safe and effective outcomes using advanced techniques. Dr. Tan has authored over 100 scientific papers, abstracts, book chapters, and books. His glaucoma research addresses advanced imaging, molecular pathogenesis, drug development, and surgical techniques. He has received awards from the National Institutes of Health, Research to Prevent Blindness, and the American Glaucoma Society.

Dr. Tan provides patient care at the Doheny Eye Center UCLA locations in Arcadia and Pasadena.

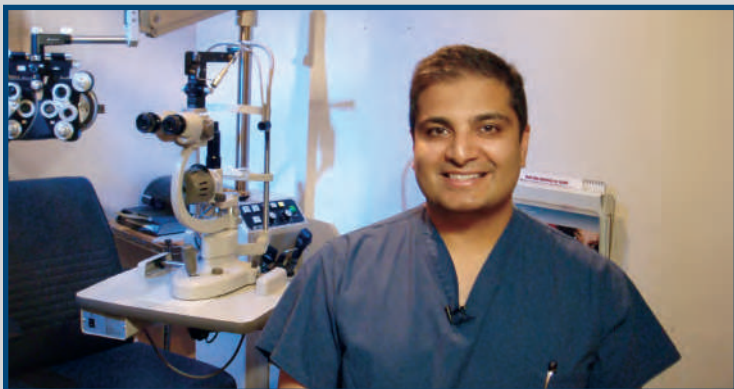
Research Grants

Karl Kirchgessner Foundation:
Kirchgessner Foundation Vision
Research Grant, 1/20/15–6/30/17



The Huntington Pavilion in Pasadena serves as the primary hub of the Doheny Eye Center UCLA.

Clinical Faculty Based at Other Sites



Uday Devgan, MD, FACS, FRCS

Clinical Professor of Ophthalmology

Chief of Ophthalmology,
Olive View-UCLA Medical Center

Dr. Devgan is a cataract and refractive surgery specialist who has taught ophthalmic surgery in more than 50 countries. He has been actively involved in resident teaching for nearly two decades, and he has mentored more than 130 residents over the course of thousands of ocular surgeries, including advising former residents after the culmination of their training. Passionate about teaching the next generation of ophthalmologists, Dr. Devgan has been honored with the ophthalmology Faculty Teaching Award an unprecedented four times.

In addition to his work as chief of ophthalmology at the Olive View-UCLA Medical Center, Dr. Devgan is in private practice, has a bio-mathematical company, and has helped develop an innovative accommodating lens implant. Dr. Devgan is also an active leader in the field—writing, consulting, lecturing, performing live surgery at educational events, and participating in charitable surgical missions throughout the world.

Bruce B. Becker, MD, PC

Clinical Professor of Ophthalmology

Dr. Becker is an oculoplastic and reconstructive surgery specialist who teaches residents and helps with oculoplastic clinical and surgical cases at both Olive View-UCLA Medical Center and the Veterans Affairs Greater Los Angeles Healthcare System. In addition, Dr. Becker instructs residents on lacrimal anatomy, physiology, and diseases in preparation for the board review course.

Andrew M. Chang, MD

Assistant Clinical Professor
of Ophthalmology

Dr. Chang specializes in cataract, laser surgery, glaucoma, and diseases of the cornea. He teaches residents at the Olive View-UCLA Medical Center, and he has been an integral part of the education of UCLA ophthalmology residents for more than a decade.

Richard H. Hoft, MD

Associate Clinical Professor
of Ophthalmology

A graduate of the UCLA Stein Eye Institute residency program, Dr. Hoft now mentors and instructs residents at Harbor-UCLA Medical Center.

Jason Jun, MD

Clinical Instructor in Ophthalmology

Dr. Jun instructs residents at the Veterans Affairs Greater Los Angeles Healthcare System.

Alpa A. S. Patel, MD

Assistant Clinical Professor
of Ophthalmology

Dr. Patel has been training UCLA ophthalmology residents at the Veterans Affairs Greater Los Angeles Healthcare System since 2006. Specializing in comprehensive ophthalmology and advanced technology cataract surgery, Dr. Patel works with residents in the clinic, teaching them to hone their examination and critical thinking skills. She also attends cases in the operating room where she works with the residents on the basic and advanced skills of cataract surgical procedures.

Aaron M. Savar, MD

Assistant Clinical Professor
of Ophthalmology

Specializing in ophthalmic plastic and reconstructive surgery, Dr. Savar is an attending physician at Harbor-UCLA Medical Center, where he supervises residents in the operating room. He is also involved in medical student teaching, participating in didactic sessions with second-year medical students in addition to having third-year medical students rotate in his office and operating room.

Louis M. Savar, MD

Clinical Instructor in Ophthalmology

At the Veterans Affairs Greater Los Angeles Healthcare System, Dr. Savar supervises and instructs residents and fellows in the operating room and clinic in the evaluation and treatment of disorders of the eyelids, orbit, and lacrimal system. Additionally, he leads second-year UCLA medical student small group didactic sessions and welcomes third-year medical students into his office and operating room as part of their surgery rotation.

Kayar Shah, MD

Assistant Clinical Professor
in Ophthalmology

Dr. Shah teaches cataract and glaucoma surgery to residents at Olive View-UCLA Medical Center. He also provides guidance to residents regarding the diagnosis and management of challenging clinical cases.

Sadiqa Stelzner, MD, MA, FACS

Associate Clinical Professor
of Ophthalmology

Dr. Stelzner is a recipient of the Best Teaching Award in recognition of her contributions to residency education at the UCLA Stein Eye Institute. Specializing in comprehensive eye care and innovative eye surgical techniques, Dr. Stelzner instructs residents at the Veterans Affairs Greater Los Angeles Healthcare System.

Mark Volpicelli, MD

Clinical Instructor in Ophthalmology

Dr. Volpicelli brings a high level of dedication and expertise in cornea, cataract, and refractive surgery to his work in training residents at Harbor-UCLA Medical Center.

Stein Eye Institute Members Based at Other Sites

James W. Bisley, PhD

Associate Professor of Neurobiology and Psychology

Member of the Stein Eye Institute

Member of the Brain Research Institute

Cognitive Processing of Visual Information

Dr. Bisley's research revolves around understanding the neural mechanisms underlying the cognitive processing of visual information. These cognitive processes include visual perception, visual memory, and visual attention. His recent work has focused on how the responses of neurons in the posterior parietal cortex are involved in the allocation of visual attention to neurons in visual cortices and how they guide eye movements in goal-directed visual search.

Patrick T. Dowling, MD, MPH

Chairman, UCLA Department of Family Medicine

Kaiser Benefit Fund Endowed Professor of Community Medicine

Member of the Stein Eye Institute

Health Care Policy and Access for Underserved Populations

Dr. Dowling is chair-elect of the California Community Foundation's Board of Directors and a member of the executive committee of the Board of Trustees at the Charles R. Drew University of Medicine and Science in South Los Angeles. Further, he serves as chair of the Public Health Commission of the Los Angeles County Department of Health.

A medical educator for more than 30 years, he has repeatedly received federal, state, and foundation funding to link residency training and medical student education in family medicine to underserved communities in California, with the goal of improving access to basic care in designated underserved communities. In that role, Dr. Dowling is co-founder and

associate director of the UCLA IMG program, which assists bilingual-bicultural immigrant Hispanic physicians who are residing here legally to compete for residency training positions in family medicine, a prelude to being licensed to practice in California. Upon completion of their residency, the physicians must work in a health center in a designated health professional shortage area in the state for 2-3 years. To date, 117 physicians have completed the program and 112 are practicing family medicine in our state's rural or central city physician shortage areas, thereby addressing cultural and linguistic barriers to care.

Dr. Dowling has worked closely with Dr. Anne Coleman on the Remote Area Medical Program, as well as the Care Harbor program, which provides medical, dental, and eye care for more than 3,500 homeless, indigent, and low income families in the Los Angeles community. Dr. Dowling's presence as a member of the Stein Eye Institute adds a new dimension that is being developed and pioneered by Dr. Coleman at the Institute's Center for Eye Epidemiology.

Antoni Ribas, MD

Professor of Medicine, Surgery, and Molecular and Medical Pharmacology

Member of the Stein Eye Institute

The Immune System and Oncogene-Targeted Therapies in the Treatment of Cancer

Dr. Antoni Ribas is Professor of Medicine, Professor of Surgery, and Professor of Molecular and Medical Pharmacology at UCLA, Director of the Tumor Immunology Program at the Jonsson Comprehensive Cancer Center, Director of the Parker Institute for Cancer Immunotherapy Center at UCLA, and Chair of the Melanoma Committee at SWOG. Dr. Ribas is a physician-scientist who conducts laboratory and clinical research in malignant melanoma, focusing on gene engineered T cells, PD-1 blockade, and BRAF targeted therapies. His National Cancer

Institute (NCI), State of California, and private foundation-supported research laboratory develops models of disease to test new therapeutic options, studies mechanism of action of treatments in patients, and the molecular mechanisms of therapy resistance. He is an elected member of the American Society of Clinical Investigation, the recipient of an American Association for Cancer Research Richard and Hinda Rosenthal Memorial Award, and an NCI Outstanding Investigator Award.

Dario L. Ringach, PhD

Professor of Neurobiology and Psychology, Biomedical Engineering Program

Member of the Stein Eye Institute

Visual Perception and Neurophysiology

Dr. Ringach's research focuses on the relationship between eye movements and visual perception, as well as how motor planning and execution, such as reaching, grasping, navigating, and adjusting body posture, is influenced by visual information and impaired vision. In collaboration with a team of neurosurgeons at UCLA, Dr. Ringach's laboratory is also recording the brain activity of patients with epilepsy who are undergoing clinical evaluation for surgical treatment. This unique opportunity is shedding new light into the processes involved in object recognition and perception.

Christian Altenbach, PhD

Research Ophthalmologist

Structure and Function of Rhodopsin

The membrane protein rhodopsin is a critical first step in visual transduction, converting light energy into a chemical form in the photoreceptor cell of the eye. To understand this process on a detailed molecular level, Dr. Altenbach is using site-directed spin labeling and electron paramagnetic resonance spectroscopy to study the structure of rhodopsin in the absence of light, as well as the changes in structure caused by light.

Navid Amini, PhD

Assistant Research Ophthalmologist

Biomedical Imaging and Mobile Health

Dr. Amini's research interests lie in the area of biomedical imaging and mobile health. He develops signal processing and machine learning techniques in ophthalmic research, and utilizes such techniques in quantitative assessment of major ocular diseases, including glaucoma. In addition, Dr. Amini investigates the behavior of nonvisual sensory systems and the effects of low vision on activities of daily living.

Dr. Amini has served on the Technical Program Committee for several conferences in the field of medical informatics. He is a named inventor on three U.S. patents, two of which have been licensed and are moving towards commercialization. He is the recipient of the Edward K. Rice Outstanding Doctoral Student Award, UCLA Chancellor's Award for Postdoctoral Research Honorable Mention, Alcon Young Investigator Award, the Vodafone Wireless Innovation award, and the UCLA Clinical and Translational Science Institute Core Grant. Dr. Amini has received unrestricted gifts from influential companies, such as Google and Symantec, for pursuing end-to-end collaborative research.

Barry L. Burgess, BS

Research Specialist

Degenerative Retinal Disease Research

Mr. Burgess provides research support for the Photoreceptor/RPE Cell Biology Laboratory of Dr. David Williams. Research interests include production of differentiated RPE cells from human stem cell precursors and developing in vitro models of oxidative stress involved in degenerative retinal disease progression.

Jeremy D. Cook, PhD

Assistant Project Scientist

Regulation of the Visual Cycle

Dr. Jeremy Cook is studying the role of peropsin, the non-visual opsin, in retinal pigment epithelial cells. This protein appears to regulate the metabolism of visual retinoids in a light-dependent fashion.

Rajendra Gangalum, PhD

Assistant Research Specialist

Function and Regulation of Small Heat Shock Protein α B-crystallin in Health and Disease

Dr. Gangalum's research seeks to gain understanding of the physiological function of α B-crystallin in the developing ocular lens and non-ocular tissues. α B-crystallin has been shown to associate with pathologies such as cataracts, cancer, age-related macular degeneration (AMD), and various neurodegenerative diseases. Dr. Gangalum has discovered that α B-crystallin is a Golgi-associated membrane protein, secreted into extracellular medium via exosomes from retinal pigment epithelial cells. These findings explain how α B-crystallin is detected in the protein-lipid deposits known as drusen in AMD. Dr. Gangalum is using a gene silencing approach and knock-out mouse model to investigate the function of α B-crystallin. His recent findings have demonstrated that α B-crystallin silencing (α BshRNA) in retinal pigment epithelial cells inhibits secretion and enhances endo-lysosomal fusion. Dr. Gangalum has also generated the transgenic mice model of childhood lamellar cataract. Cataracts in infants are debilitating because opacities in the fiber cells are confined to the lens nucleus and hinder the transmission of light to the retina, which impairs the development of visual cortex in the brain. Dr. Gangalum is using next generation sequencing, cell and molecular biology approaches to understand the molecular basis of lamellar cataract pathology in single lens fiber cells. This model system is the only paradigm available for future investigations on early childhood cataracts.

Sheyla Gonzalez, PhD

Assistant Project Scientist

Modulation of Notch Signaling Pathway to Increase the ex vivo Expansion of Human Limbal Epithelial Stem Cells

Dr. Gonzalez's research aims to improve the ex vivo expansion of limbal epithelial stem cells (LSCs) by modulating Notch signaling in individuals suffering from limbal stem cell deficiency (LSCD). This disease is characterized by the lack or deficiency of the stem cells that regenerate the cornea during normal homeostasis and wound healing. The identification of niche factors could help to improve the in vitro production of LSCs for transplantation. Notch signaling has been reported to regulate proliferation and differentiation of several types of adult stem cells. Different Notch ligands and receptors could have different roles in the regulation of the LSCs in vivo. Dr. Gonzalez's research could help to elucidate the mechanisms by which Notch signaling modulate the maintenance of the LSC phenotype in vivo and improve the expansion efficiency of the stem cells in vitro.

Sonia Guha, PhD

Assistant Project Scientist

Unraveling New Therapeutic Targets for Ocular Albinism

Dr. Guha's research aims to study the genes that may be associated with the misrouting of retinal ganglion cell (RGC) axons at the brain's optic chiasm in individuals affected with X-linked ocular albinism type 1 (*OA1*). This disease, caused by mutations in the *OA1* gene that is mainly expressed in the retinal pigment epithelium (RPE), is also characterized by hypopigmentation and presence of macromelanosomes in the RPE. How the reduced pigmentation of *OA1* RPE exerts its effects on the RGCs to influence the misrouting of their axons at the optic chiasm remains unsolved. Thus, Dr. Guha's research findings have the potential to unravel new therapeutic targets for *OA1*.

Joanna J. Kaylor, PhD

Assistant Research Ophthalmologist

Visual Chromophore Regeneration in the Retina of the Eye

Recent biochemical and physiological studies support the regeneration of visual chromophore in the retina of the eye. Dr. Kaylor is using biochemistry and molecular biology to identify the enzymes and chemicals involved. Her work has led to the identification and characterization of two new vitamin A processing enzymes in the retina, including the retinyl-ester synthase multifunctional O-acyltransferase (MFAT) and the first vitamin A retinol isomerase, dihydroceramide desaturase-1 (DES1). Dr. Kaylor is now focused on the role that retinal G-protein coupled receptor (RGR) plays in visual chromophore processing in the retina.

Jacky M. K. Kwong, PhD

Research Ophthalmologist

Degeneration of Retinal Ganglion Cells and Neuroprotection

Dr. Kwong's research goal is to identify novel neuro-protective therapies for glaucoma. To understand the loss of retinal ganglion cells in glaucoma, his research focuses on the response and the cell death pathway of retinal ganglion cells in animal models related to optic nerve injury and glaucoma. Dr. Kwong and his colleagues recently found retinal ganglion cell-specific proteins and imaging probes for dying cells. He is utilizing these proteins to visualize retinal ganglion cells and to investigate their function in retinal ganglion cells during degeneration. He is also applying pharmacologic techniques to evaluate therapies that enhance endogenous neuroprotective responses against glaucomatous, excitotoxic, and axonal damage to nerve cells, and is utilizing multidisciplinary methods to understand the protective mechanisms.

Qihua Le, MD, PhD

Visiting Assistant Project Scientist

Diagnostic Potential of Ocular Imaging in the Diagnosis of Limbal Stem Cell Deficiency

Dr. Le's research aims to study the diagnostic potential of a newly-developed ocular imaging technique, in vivo confocal microscopy and anterior segment optical coherence tomography, in the diagnosis of limbal stem cell deficiency (LSCD). Currently, the diagnosis and grading of LSCD is based primarily on clinical findings, which are subjective and inaccurate. Consensus on the diagnosis of LSCD and a grading system that is based on objective and quantitative methods have not yet been established. New ocular imaging techniques provide the way to evaluate the alterations of the cells and tissues of ocular surfaces in an objective and quantitative way. Dr. Le's study findings have the potential to identify better parameters for the clinical diagnosis and grading of LSCD.

Anna Matynia, PhD

Associate Research Ophthalmologist

Neural and Molecular Basis of Photoallodynia

Dr. Matynia is investigating the mechanisms of photoallodynia, a condition in which normal levels of light produce or enhance ocular or headache pain. Using a combination of behavioral, molecular, and cellular approaches in genetic mouse models, the goal is to identify mechanisms of light-pain association for different causes of photoallodynia, including corneal, retinal, and central causes such as dry eye injury, achromatopsia, and migraine, respectively. The research findings will form the basis of treatment strategies for this condition.

Hua Mei, PhD

Assistant Project Scientist

Johan Pahlberg, PhD

Assistant Project Scientist

Optimal Processing of Sensory Signals in the Retina

Dr. Pahlberg is interested in how noise in the mammalian retina is mitigated to allow for highly sensitive night vision. The research is focused on how rod photoresponses are processed and parsed into the retinal circuitry, the correlations between retinal physiology and behavior for low light level vision, and thus, how sensory systems increase their signal-to-noise ratio and the information encoded in the neural pathway.

Charles “Dutch” Ratliff, PhD

Assistant Project Scientist

Information Processing and Metabolism in the Retina

Dr. Ratliff investigates the mechanisms by which the retina creates a metabolically efficient representation of visual information. This work combines techniques from patch-clamp electrophysiology, mathematical modeling, and molecular simulations.

Alberto C. Ruiz-Morales

Research Specialist

Visual Cycle

Mr. Ruiz is a molecular biologist who has been directly involved in the cloning and characterization of important enzymes critical for the proper functioning of the visual cycle, such as the lecithin retinol acyltransferase (LRAT) enzyme. Another area of investigation is the generation and evaluation of knock-out mouse models for LRAT and a second visual cycle enzyme, the retinol binding protein receptor STRA6. Currently, Mr. Ruiz is analyzing genes, such as *ARMS2* and *HTRA1*, which are thought to be involved in age-related macular degeneration.

Alejandra Young, PhD

Assistant Project Scientist

Ocular Albinism

Dr. Young’s research is focused on the study of the molecular mechanisms that cause ocular albinism type 1 (*OA1*), a disease caused by mutations in the *OA1* gene and characterized by hypopigmentation of the retinal pigment epithelium and abnormal crossing of the optic axons at the optic chiasm. In addition to studying the yet unknown Oa1-Gia3 downstream signaling cascade, she investigates the potential therapeutic use of engineered human embryonic stem cell-derived extracellular vesicles (ESEVs) for the treatment of ocular albinism. Her research explores whether these ESEVs enriched in Oa1 mRNA/protein can be used as novel, cell-derived delivery vehicles of functional Oa1 to rescue defective ocular albino visual phenotype.

Benjamin Bert, MD, FACS

Associate Physician Diplomate

Cornea and External Eye Diseases

Dr. Bert provides comprehensive ophthalmic care and is a subspecialist in cornea/external disease. His areas of expertise include: dry eye/blepharitis, conjunctivitis, uveitis, acute corneal injury, and genetic corneal disorders, as well as cataract surgery with advanced intraocular lenses and refractive surgery. Dr. Bert sees patients at the Doheny Eye Center UCLA offices in Orange County and Pasadena.

Laura Bonelli, MD

Associate Physician Diplomate

Neuro-Ophthalmology and Comprehensive Ophthalmology

Dr. Bonelli provides clinical supervision to resident physicians at the University Ophthalmology Associates and teaches medical students during their ophthalmology surgical subspecialties clinical rotation. She is collaborating on a study to learn and better understand giant cell arteritis (GCA), an inflammation of the lining of the arteries. GCA frequently causes blurred or double vision, and if left untreated, may result in loss of vision. She is also a co-investigator for the National Eye Institute-sponsored study of idiopathic intracranial hypertension.

Eli L. Chang, MD

Associate Physician Diplomate

Ophthalmic Plastic, Orbital, and Reconstructive Surgery

Dr. Chang is a specialist in ophthalmic plastic, orbital, and reconstructive surgery. He specializes in treatment of diseases of the eyelids, tear drainage system, and orbit (the area behind the eye). His expertise includes eyelid cancers, thyroid eye disease, fractures, and trauma of the area surrounding the eye, tearing, and cosmetic surgery of the eyelids. Dr. Chang sees patients at the Doheny Eye Center UCLA offices in Orange County.

Melissa W. Chun, OD

Associate Clinical Professor of Ophthalmology

Director of the UCLA Vision Rehabilitation Center

Vision Rehabilitation

Dr. Chun's clinical research interests are in the areas of vision rehabilitation outcomes and training techniques that maximize visual function. She is a member of the Low Vision Research Network, a nationwide collaboration of low vision specialists for multicenter clinical studies. She is also involved in visual outcome measures for various clinical studies on macular degeneration.

Rachel Feit-Leichman, MD

Associate Physician Diplomate

Cataract Surgery

Dr. Feit-Leichman divides her time between supervising residents and providing patient care at the Stein Eye Institute's Urgent Care Clinic, University Ophthalmology Associates; and teaching cataract surgery and overseeing residents at the ophthalmology clinic of the Harbor-UCLA Medical Center. Dr. Feit-Leichman is also active in striving to improve patient access to eye care in the greater Los Angeles County Healthcare System.

Hamid Hosseini, MD

Clinical Instructor of Ophthalmology

Retinal and Macular Eye Disease

Dr. Hosseini is a clinician and vitreoretinal surgeon with special interest in retinal and macular conditions, such as macular degeneration, diabetic retinopathy, and retinal detachment. He participates in all activities of the Retina Division, including research, education, and clinical care.

Batool Jafri, MD

Associate Physician Diplomate

Assistant Clinical Professor of Ophthalmology

Cornea/External Disease/Refractive Surgery

Dr. Jafri provides patient care as well as supervision to resident physicians and cornea fellows at the Stein Eye Institute. Her focus is medical and surgical treatment of diseases of the cornea, external disease, and refractive conditions like near and far sightedness. She also provides general ophthalmic care and offers cataract surgery with premium intraocular lens implants.

Monica R. Khitri, MD

Associate Physician Diplomate

Pediatric Ophthalmic Diseases and Strabismus

Dr. Khitri specializes in the evaluation and treatment of pediatric ophthalmic diseases, including pediatric cataracts, nasolacrimal duct obstructions, amblyopia, and retinopathy of prematurity. She also treats and operates on strabismus in both children and adults. Dr. Khitri sees patients at the Doheny Eye Center UCLA locations in Arcadia and Pasadena. She also teaches residents and fellows at Harbor-UCLA Medical Center, where she is chief of the pediatric ophthalmology service.

Phillip Le, MD, PhD

Associate Physician Diplomate

Retinal and Macular Diseases

Dr. Le is a comprehensive ophthalmologist who specializes in retinal and macular diseases. He sees patients at the Doheny Eye Center UCLA–Pasadena.

Mitra Nejad, MD

Associate Physician Diplomate

Comprehensive Ophthalmology

Dr. Nejad practices comprehensive ophthalmology at the Stein Eye Institute and the Stein Eye Center–Santa Monica. Her practice involves general ophthalmic care, as well as cataract and refractive surgery. In addition, Dr. Nejad teaches UCLA medical students and residents at the Stein Eye Institute, as well as supervising resident cataract surgery at Harbor-UCLA Medical Center.

Tania Onclinx, MD

Clinical Instructor of Ophthalmology

Associate Physician Diplomate

Urgent Care and Clinical Supervision

Dr. Onclinx attends at the Urgent Care Walk-In service at the Stein Eye Institute. She teaches resident physicians and medical students at the University Ophthalmology Associates during their subspecialty clinical rotation. She also provides clinical supervision to resident physicians at Ronald Reagan UCLA Medical Center and UCLA Medical Center, Santa Monica.

Susan S. Ransome, MD

Associate Physician Diplomate

Clinical Instructor of Ophthalmology

HIV and Diabetic Retinopathy

Dr. Ransome is participating in a clinical research study involving HIV-infected patients who have diabetes to see whether there is increased risk of development or progression of diabetic retinopathy when subjects are treated for abdominal lipodystrophy with Egrifta (tesamorelin).

Meryl L. Shapiro-Tuchin, MD

Associate Physician Diplomate

Assistant Clinical Professor of Ophthalmology

Co-Director of the Ophthalmology Inpatient Consultation Service

Comprehensive Ophthalmology

Dr. Shapiro-Tuchin provides clinical supervision to resident physicians. She functions as Co-Director of the Ophthalmology Inpatient Consultation Service, assisting resident physicians in their evaluation of inpatients admitted to the Ronald Reagan UCLA Medical Center and the UCLA Medical Center, Santa Monica.

Ronald J. Smith, MD

Associate Physician Diplomate

Associate Clinical Professor of Ophthalmology

Objective Assessment of Surgical Technique and Training

Dr. Smith's research interest is the objective assessment of surgical technique and development of evidence-based surgical training for residents to improve patient care. In addition to teaching residents at the Veterans Affairs Greater Los Angeles Healthcare System and in the UCLA Microsurgery Laboratory, Dr. Smith provides cornea and comprehensive eye care to patients at the Stein Eye Center–Santa Monica.

LECTURER

Kathleen L. Boldy, VMD

Lecturer in Ophthalmology

Stein Eye Institute Emeritus Faculty

Dean Bok, PhD

Dolly Green Chair of Ophthalmology
Professor of Ophthalmology Emeritus
(Active Recall)
Distinguished Research Professor
of Neurobiology
Member of the
Brain Research Institute
Member of the Stein Eye Institute

Michael O. Hall, PhD

Professor of Ophthalmology Emeritus
Founding Member of the
Stein Eye Institute

Robert S. Hepler, MD

Professor of Ophthalmology Emeritus
(Active Recall)
Founding Chief of the
Neuro-Ophthalmology Division
Member of the Stein Eye Institute

Allan E. Kreiger, MD

Professor of Ophthalmology Emeritus
(Active Recall)
Founding Chief of the Retina Division

Bradley R. Straatsma, MD, JD

Professor of Ophthalmology Emeritus
(Active Recall)
Founding Chairman of the
Department of Ophthalmology
Founding Director of the
Stein Eye Institute

Barry A. Weissman, OD, PhD

Professor of Ophthalmology Emeritus
(Active Recall)

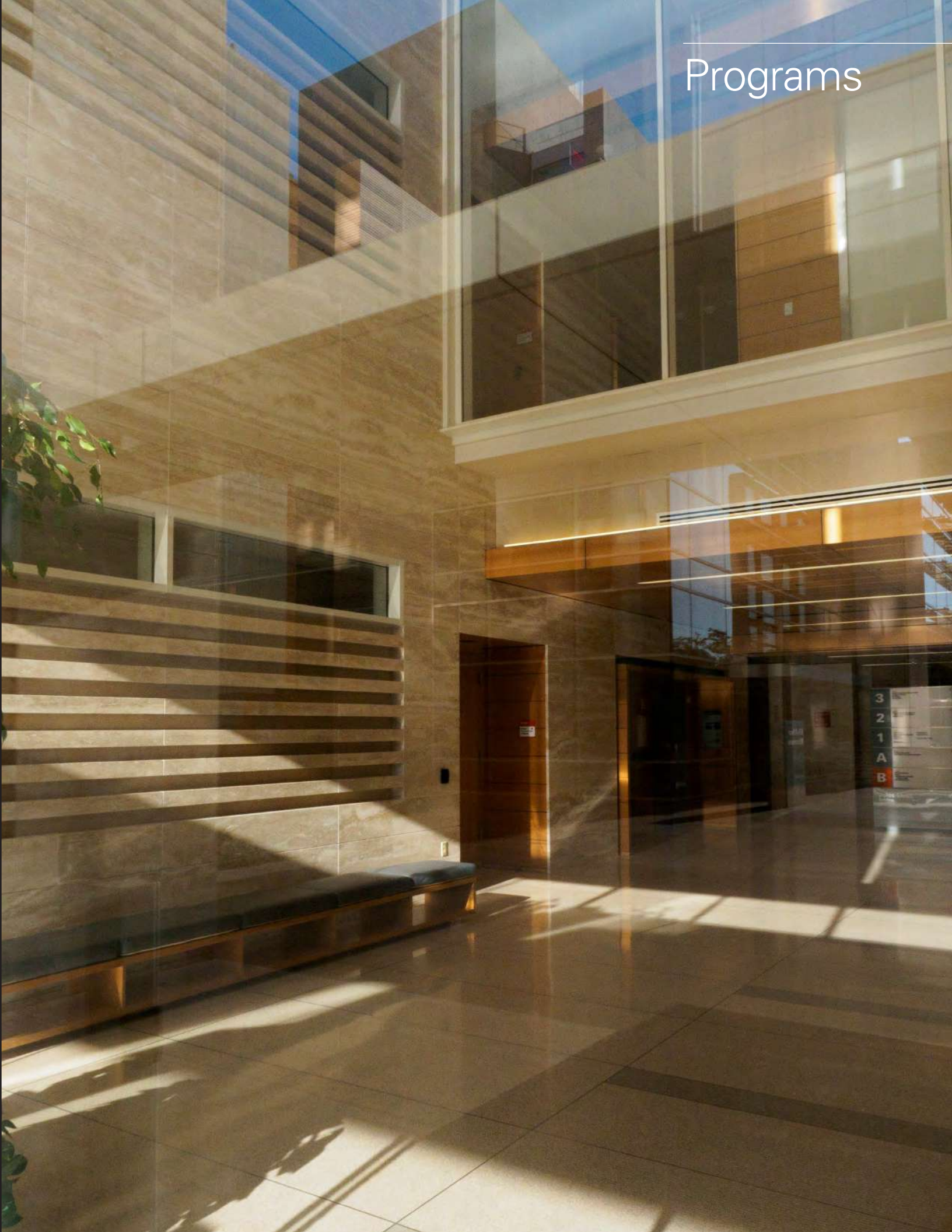
Marc O. Yoshizumi, MD

Professor of Ophthalmology Emeritus
Member of the Stein Eye Institute





Programs



Patient Care Services

The Institute's program of care for patients encompasses the full range of eye diseases. Nationally and internationally renowned faculty, along with highly skilled clinical fellows and physician residents, provide integrated consultation and treatment, including new diagnostic and therapeutic procedures that have been made available through recent scientific advances. Skilled optometrists, orthoptists, technicians, and nurses support institute ophthalmologists in their efforts. Care is delivered in distinctive subspecialty treatment centers, service areas, and clinical laboratories, as well as in specially equipped ophthalmic surgical suites. In addition, the Stein Eye Center–Santa Monica and the Doheny Eye Center UCLA offer premier eye care services in convenient neighborhood locations.

Faculty Consultation Service

Institute faculty members provide direct consultation and treatment, including emerging therapies, to patients through the Ophthalmology Faculty Consultation Service. Faculty members have extensive, advanced training in ophthalmic subspecialties, providing referring physicians and patients with a valuable resource for special eye problems.

Inpatient Consultation Service

The Ophthalmology Inpatient Consultation Service, operating 24 hours a day through the Ronald Reagan UCLA Medical Center and UCLA Medical Center Santa Monica, provides ophthalmic consultation and treatment to pediatric and adult patients who are admitted to the hospital for inpatient care.

Led by **Drs. Laura Bonelli and Meryl L. Shapiro-Tuchin**, the consultation team consists of physician-residents at the UCLA Stein Eye Institute, with subspecialty coverage provided as needed by UCLA Department of Ophthalmology faculty.

From the westside to the eastside and south to Orange County, access to the UCLA Department of Ophthalmology physicians you know and trust has never been easier.



UCLA Department of Ophthalmology
Los Angeles and Beyond

Surgical Services

Ophthalmic surgery of every kind, from cataract extraction to removal of ocular and orbital tumors, is performed in the Institute's dedicated operating rooms. Additionally, laser vision-correction surgeries, such as laser-assisted *in situ* keratomileusis (LASIK) and certain aesthetic and retinal laser surgeries and injection procedures, are performed in designated outpatient procedure rooms. Faculty members perform surgical procedures according to their specific ophthalmic specialty. They are joined by other medical specialists, including anesthesiologists, nurses, and technicians to ensure the highest quality preoperative and postoperative care.

The award-winning Edie & Lew Wasserman Building houses the Institute's expanded surgery center, which enables the Stein Eye Institute to provide a greater number of surgical services to patients in need.

Six operating suites, a sterile processing area, procedure treatment units, and postoperative areas serve all ophthalmic specialties, including retina, glaucoma, cataract, strabismus, cornea, and oculoplastics. In addition, there are three procedure rooms for physicians to perform minor laser treatments and ophthalmologic surgical procedures.

Comprehensive Ophthalmology

Comprehensive and subspecialty eye care in all medical and surgical areas of ophthalmology is offered at the Stein Eye Institute through the service formally known as University Ophthalmology Associates. **Dr. John D. Bartlett** is medical director, and ophthalmologists who are members of the UCLA Medical Group staff the practice.

Stein Eye Institute, Westwood

100 Stein Plaza, UCLA
Los Angeles, CA 90095
Referral Service: (310) 825-5000
Emergency Service: (310) 825-3090
After-Hours Emergency Service:
(310) 825-2111

Stein Eye Center–Santa Monica

The Stein Eye Center–Santa Monica, under the direction of **Dr. Colin A. McCannel**, offers the world-renowned comprehensive and subspecialty eye care of the Stein Eye Institute at a convenient location in Santa Monica. Established in 2011, the Stein Eye Center–Santa Monica features well-equipped exam rooms, an optical shop, on-site parking for easy access, and testing facilities offering a wide range of examinations, including visual field, corneal mapping (corneal topography), intraocular lens measurement, fluorescein angiography, spectral domain optical coherence tomography, and other diagnostic retinal imaging techniques.

Nearly all the evaluation, diagnosis, testing, and treatment services available at the Stein Eye Institute in Westwood are offered at the Stein Eye Center–Santa Monica by experts in retinal disorders, corneal disorders, glaucoma, neuro-ophthalmology, and laser refractive surgery. For surgeries and seldom-needed tests requiring specialized laboratories, patients can be referred to the Institute's main facility in Westwood.

Stein Eye Center–Santa Monica

1807 Wilshire Boulevard, Suite 203
Santa Monica, CA 90403
Telephone: (310) 829-0160
Fax: (310) 829-0170

UCLA Department of Ophthalmology Summary of Patient Care Statistics

	2015–2016	2016–2017
Faculty Consultation Service		
Patient visits	136,419	142,535
Comprehensive Ophthalmology		
Patient visits	19,772	22,380
Inpatient Consultation Service		
Patient evaluations	947	1,098
Clinical Laboratories		
Procedures	71,661	75,139
Surgery Services*		
Number of procedures ¹	30,184	33,617
Intravitreal Injections	11,176	12,164
Mobile Eye Clinic		
Number of patients seen	24,442	26,184
Ocular abnormalities	20%	17%
Number of trips	1,059	1,212

¹Includes lasers

*Updated

Doheny Eye Center UCLA

The UCLA Department of Ophthalmology and the Doheny Eye Institute formed a historic affiliation in 2014, and patient access to eye care was immediately broadened across Los Angeles and into Orange County, with the opening of three Doheny Eye Center UCLA locations: Arcadia, Orange County, and Pasadena. The Doheny and Stein Eye Institutes share a long tradition of excellence, and through this partnership, the respective strengths that gained each Institute an international reputation have been combined. The board-certified Doheny ophthalmologists that patients and referring physicians know and trust are now members of the UCLA Department of Ophthalmology. The Doheny Eye Center UCLA is under the supervision of Vice Chairman **Dr. Alfredo A. Sadun** and Medical Director **Dr. John A. Irvine. Dr. Srinivas R. Sadda** is the president and chief scientific officer of the Doheny Eye Institute.

Doheny Eye Center UCLA–Arcadia

As Medical Director of the Doheny Eye Center UCLA–Arcadia, **Dr. Kenneth L. Lu** oversees a renovated office that includes 12 exam rooms, dedicated diagnostic equipment, and attractive patient areas. The Center provides comprehensive ophthalmology, and nearly all subspecialty services, including glaucoma, retina, and cornea.

The Doheny Eye Center UCLA–Arcadia, which opened April 1, 2014, serves patients in the broader Arcadia region and San Gabriel area, expanding the UCLA Department of Ophthalmology's reach in Los Angeles County. The Arcadia Center is easily accessible from two freeways and provides on-site, free parking.

Doheny Eye Center UCLA–Arcadia

622 W. Duarte Road, Suite 101
Arcadia, CA 91007
Telephone: (626) 254-9010
Fax: (626) 254-9019

Doheny Eye Center UCLA–Orange County

The Doheny Eye Center UCLA–Orange County opened on May 15, 2014, in the Orange Coast Memorial Medical Center, broadening the reach of the UCLA Department of Ophthalmology south to Orange County.

Recently renovated, the Orange County location, overseen by Medical Director **Dr. Brian A. Francis**, offers comprehensive ophthalmology, as well as glaucoma, retina, cornea, neuro-ophthalmology, pediatric, and uveitis subspecialty services. The Doheny Eye Center UCLA–Orange County includes 12 exam rooms, dedicated diagnostic equipment, and inviting patient areas.

Doheny Eye Center UCLA–Orange County

Orange Coast Memorial
Medical Center
18111 Brookhurst St., Suite 6400
Fountain Valley, CA 92708
Telephone: (714) 963-1444
Fax: (714) 963-1234

Doheny Eye Center UCLA–Pasadena

The Doheny Eye Center UCLA–Pasadena, which opened on July 1, 2014, serves as the primary hub of the Doheny Eye Center UCLA. Located on the second floor of the Huntington Pavilion, the Doheny Eye Center UCLA–Pasadena provides expanded vision care services and clinics devoted to retina and cornea; comprehensive ophthalmology and oculoplastics; neuro-ophthalmology; and glaucoma. Each subspecialty clinic has dedicated, state-of-the-art diagnostic laser suites, as well as in-office procedure rooms. More complex procedures are performed at the Huntington Pavilion Surgical Suites, which are located on the building's third floor.

The Huntington Pavilion is home to a wide variety of medical practitioners, which provides physicians with ease of referral for patients requiring specialized eye care and provides patients with the added convenience of seeing their doctors and having any necessary services all in one location. The Medical Director of the Doheny Eye Center UCLA–Pasadena is **Dr. Vikas Chopra**.

Doheny Eye Center UCLA–Pasadena

Huntington Pavilion
625 S. Fair Oaks Blvd., 2nd Floor
Pasadena, CA 91105
Telephone: (626) 817-4747
Fax: (626) 817-4748



Research and Treatment Centers

The Research and Treatment Centers provide subspecialty care from faculty physicians who are actively involved in related research, enabling emerging and experimental treatment options to be developed for a gamut of eye disorders. In addition to comprehensive treatment, the centers provide both patients and physicians with expert diagnostic and consultation services for diseases that are difficult to identify and treat. Ophthalmology faculty work closely with other specialists, both within the Stein Eye Institute and in other UCLA clinical departments, to create a multidisciplinary team customized for each patient's unique medical needs.

Aesthetic Center

The Aesthetic Center, under the direction of **Dr. Robert Alan Goldberg**, provides services to patients who are interested in enhancing their appearance through aesthetic surgery. **Dr. Daniel B. Rootman** also sees patients. Established in 1998, the Center has earned a reputation for high quality, individualized care delivered by surgeons trained in both ophthalmic and plastic surgery.

Surgical services include upper and lower eyelid blepharoplasty, endoscopic forehead lifting, endoscopic midface surgery, lifting of the neck and face, liposuction, fat transfer, and skin treatment, as well as dermal filler and other cosmetic injections to smooth facial lines. Minimally invasive approaches are utilized to provide the optimal aesthetic result. A major goal of the Center is to conduct research focused on improving understanding of facial aging, surgical healing, and on developing new techniques for aesthetic surgery. Center physicians have pioneered minimal incision surgical techniques to enhance the

normal function and appearance of the eyes and face, and often receive referrals for complex and re-operative plastic surgery cases.

Center for Community Outreach and Policy

The Stein Eye Institute's Center for Community Outreach and Policy, under the direction of **Dr. Anne L. Coleman**, is dedicated to the principle that all individuals deserve the best vision attainable. Building upon the Institute's long tradition of community service and leadership at the interface of ophthalmology and public health, the Center conducts vital research in public-health ophthalmology through the UCLA Center for Eye Epidemiology and provides high-impact community-based services, such as the UCLA Mobile Eye Clinic.

UCLA Center for Eye Epidemiology

The UCLA Center for Eye Epidemiology was established in 1997 to promote interdisciplinary investigations into blinding diseases of public health importance. It is supported by private donations, including an endowment established by The Ahmanson Foundation. The Center maintains and improves vision health through public health research and intervention, and serves as a coordinating body for expanding and sharing information.

Center members have expertise in epidemiology, biostatistics, health policy, public health, and international health. Members draw on their diverse backgrounds and complementary skills to promote an understanding of issues related to vision health as it affects individuals, communities, and society. The Center encourages collaborative research among faculty and investigators from various UCLA departments and other institutions around the world to advance knowledge related to the causes and prevention of specific eye diseases.

UCLA Mobile Eye Clinic

For more than 40 years, the UCLA Mobile Eye Clinic has supported patient care and screening programs in neighborhoods where poverty and vision disabilities intersect. The dedication and hard work of UCLA Mobile Eye Clinic ophthalmologists, technicians, and volunteers have touched the lives of hundreds of thousands of individuals.

The UCLA Mobile Eye Clinic, a 39-foot-long bus specially outfitted with eye examination equipment, is supported by charitable contributions to the Stein Eye Institute. The UCLA Mobile Eye Clinic's staff of trained ophthalmic personnel provides general eye care to over 25,000 underserved adults and children annually throughout Southern California. Services include vision screening, ophthalmic examination and refraction, diagnosis of potential or existing eye disorders, treatment of some ocular diseases, and appropriate referral of patients who need additional care.

Center to Prevent Childhood Blindness

The Center to Prevent Childhood Blindness, under the direction of **Dr. Sherwin J. Isenberg**, is committed to reducing pediatric blindness. UCLA physicians and basic scientists, including **Drs. Gary N. Holland, Steven Nusinowitz**, and **Irwin Weiss**, collaborate on research, education, and patient care programs designed to increase awareness and help treat pediatric blindness. Significant emphasis is on the development and evaluation of ophthalmic medical and surgical options for children.

Center members are developing a new noninvasive method of measuring blood gases from the surface of the eye, which may be critical in preventing retinopathy of prematurity, a leading cause of blindness in premature newborns. In another avenue

of research, the Center developed an extremely inexpensive antiseptic solution to treat pediatric corneal infections in developing areas of the world and completed a study showing its effectiveness in treating corneal ulcers that now blind more than 400,000 children worldwide. A second study, which evaluated the solution's effectiveness in treating fungal corneal infections, a major cause of pediatric blindness in tropical countries, has shown promise in treating the milder fungal infections.

Center for Regenerative Medicine in Ophthalmology

Representing a milestone in the therapeutic use of stem cells, in 2011, Stein Eye Institute clinician-scientists successfully transplanted the first human embryonic stem-cell-derived retinal pigment epithelial cells into the eyes of legally blind patients with Stargardt disease and dry macular degeneration.

The Center for Regenerative Medicine in Ophthalmology (CRMO), under the co-direction of **Drs. Sophie X. Deng** and **Gabriel H. Travis**, is building upon these efforts, using stem cells for the treatment of corneal disorders and retinal degenerative diseases. The CRMO fosters collaboration between basic scientists and clinicians, including **Drs. Debora Farber, Jean-Pierre Hubschman, Steven D. Schwartz**, and **Xian-Jie Yang**, to translate advances in basic science research into new and improved clinical therapies.

Many of the blinding eye diseases, including glaucoma, macular degeneration, and corneal diseases, are due to the loss of functional tissue. The development of effective and safe individualized stem-cell-based therapies relies on robust basic science, as well as translational and clinical research. The CRMO supports current stem cell studies and pursues new research programs to diagnose, treat, and ultimately cure and prevent blinding eye diseases.

Clinical Research Center

The UCLA Department of Ophthalmology Clinical Research Center (CRC) was established in 1998 to provide core support to faculty members who are conducting patient-based research studies. This support involves vital, behind-the-scenes activities that facilitate the clinical research process. **Dr. Gary N. Holland** serves as Director of the CRC working with full-time administrator, **Ms. Ellen Pascual**, and a Board of Directors composed of Department of Ophthalmology faculty members. The CRC has an in-house statistician, **Fei Yu, PhD**. CRC staff members interact with granting agencies and government regulatory bodies, assist with the preparation of grant applications, participate in the design and management of clinical studies, and perform data collection and analysis functions for investigators at both the UCLA Stein Eye Institute and the Doheny Eye Institute.

Institute faculty members are currently conducting 80 clinical research studies (listed in the Appendices). Patients can volunteer to participate in studies that contribute to a better understanding of ocular disorders or that evaluate new, potentially better treatments for various diseases of the eye.

Contact Lens Center

The Contact Lens Center, under the supervision of **Dr. Vivian Phan Shibayama**, serves patients with all ophthalmic diagnoses that can be treated with contact lenses. The Center's primary focus is on customized specialty lenses that visually rehabilitate conditions, such as keratoconus, corneal transplants, corneal scarring, postrefractive surgery ectasia, ocular surface disease, and aphakia. Dr. Shibayama also prescribes contact lenses to address farsightedness, nearsightedness, and presbyopia.

The specialty lenses that are available through the Contact Lens Center include rigid gas permeable contact lenses, multifocal contact lenses,

hybrid lenses, scleral lenses, custom soft lenses, soft lenses for irregular corneas, prosthetic soft lenses, pediatric aphakic lenses, and adult aphakic lenses.

Dr. Shibayama's clinical research is focused on keratoconus and scleral lenses for the treatment of ocular surface disease. A large majority of her patients require custom contact lenses and are referred by corneal specialists.

Diabetic Eye Disease and Retinal Vascular Center

Under the direction of **Dr. Steven D. Schwartz**, the Diabetic Eye Disease and Retinal Vascular Center provides diabetic patients with comprehensive ophthalmic care. Established more than a decade ago, the Center has contributed significantly to the understanding, treatment, and prevention of diabetic eye disease. Current focus is on innovation in technologies and techniques that expand the standard of treatment, such as drugs and pharmacotherapeutic strategies, new lasers and laser strategies, refinement of microsurgical techniques specific to diabetic eye diseases, and nontraditional treatment approaches.

The Center's treatment philosophy is based upon the systemic nature of diabetes. Patient care is coordinated with other UCLA departments to address the special needs of diabetics that lie outside the field of ophthalmology. Center treatment interventions include pharmacotherapy, laser and ophthalmic surgery. Recognizing the special care needed for diabetics in any surgical situation, Center physicians perform all eye surgeries for diabetics, including those specific to the disease, as well as vitrectomy, cataract surgery, and retinal reattachment.

Eye Trauma and Emergency Center

The Eye Trauma and Emergency Center, under the direction of **Dr. Robert Alan Goldberg**, provides immediate response to ophthalmic emergencies through an eye trauma team available 24 hours a day for consultative, medical, and surgical care involving both primary and secondary ocular repairs. Ophthalmic emergency care has been provided by the UCLA Department of Ophthalmology since its inception. In 1980, the Eye Trauma and Emergency Center was formally established to encompass all levels of ocular trauma within the UCLA hospital system, including support to affiliated institutions.

Patients are commonly referred to the Center for such ocular traumas as ruptured globe, intraocular foreign bodies, acute orbital hypertension, retinal detachment, chemical burns of the cornea and conjunctiva, and acute vitreous hemorrhage. The Center offers complete evaluation and treatment of the traumatically injured eye, including vitreoretinal and/or orbital and ophthalmic plastic surgery, anterior segment surgery, and medical follow up. Expertise is provided for both urgent primary repair and scheduled secondary repair.

Gerald Oppenheimer Family Foundation Center for the Prevention of Eye Disease

Established with a generous pledge from **Gail and Gerald H. Oppenheimer**, the Gerald Oppenheimer Family Foundation Center for the Prevention of Eye Disease is committed to the discovery of agents and methods to prevent ophthalmic diseases. Areas of study supported by the Foundation include genetic and environmental factors that may cause eye disease, and pharmacologic and natural agents to prevent eye disease. The Center complements an expanding array of research in many other fields at UCLA, where rigorous scientific methods are being applied to study novel approaches to health care.

Glaucoma Center for Excellence in Care and Research

In the United States, glaucoma is the second cause of irreversible legal blindness. If glaucoma is detected early, however, vision loss can be slowed or even prevented. Under the direction of **Dr. Joseph Caprioli**, the Glaucoma Center for Excellence in Care and Research is committed to giving each patient a chance for a brighter future and a life filled with sight.

Stein Eye Institute researchers, **Drs. Anne L. Coleman, JoAnn A. Giaconi, Jacky M. K. Kwong, Simon K. Law, Kouros Nouri-Mahdavi, and Natik Piri**, are working with researchers and statisticians from the UCLA School of Public Health to identify individuals at greatest risk for vision loss, to develop and assess therapeutic strategies, and to implement new treatments to preserve vision.

Macular Disease Center

The Macular Disease Center, under the direction of **Dr. Steven D. Schwartz**, was created in 1994 in response to the growing national incidence of macular degeneration. The Center's mission is threefold: provide high-quality patient care, utilizing standard and developing treatments; offer associated rehabilitation services, such as low-vision aids and counseling, in order to enhance quality of life for patients; and promote collaborative translational research between clinicians and basic science researchers into the cause of macular disease.

Patients with the atrophic or dry form of macular disease are evaluated and often considered for clinical trials, such as the stem cell programs, and their cases are followed at the Macular Disease Center in conjunction with services offered by the Vision Rehabilitation Center. Patients with the

exudative or wet form of macular disease are diagnosed and treated with cutting-edge therapies. Treatment options for wet macular disease include therapy and participation in clinical studies that are matched to the patient's disease status. A patient coordinator is available to answer questions and provide information on an ongoing basis.

Ocular Inflammatory Disease Center

The Ocular Inflammatory Disease Center, under the direction of **Dr. Gary N. Holland**, was established in 1985 to coordinate research, educational activities, and patient-care services related to a broad spectrum of inflammatory eye disorders, including uveitis, infectious corneal ulcers, endophthalmitis, autoimmune diseases of the cornea and ocular surface, and the ophthalmic manifestations of HIV disease. The Center has a long history of participating in clinical studies and drug-therapy trials that have furthered the understanding and treatment of these diseases.

Center faculty members were the first to describe cytomegalovirus retinitis as an ophthalmic manifestation of AIDS; today the Center is a nationally recognized site of expertise for AIDS-related ophthalmic disease. Other special clinical and research programs have been developed in the following areas: ocular toxoplasmosis, uveitis in children, birdshot chorioretinopathy, immunogenetics of inflammatory eye diseases, unusual corneal infections, and mediators of intraocular inflammation.

Ophthalmic Oncology Center

The Ophthalmic Oncology Center, under the direction of **Dr. Tara A. McCannel**, is renowned for its expertise in teaching, research, and clinical management of adult posterior segment tumors. Established in the early 1980s by the Institute's Founding Director, **Dr. Bradley R. Straatsma**, the Center is internationally recognized for the diagnosis and management of ocular melanoma. The Center serves as a hub for national, long-term studies investigating ocular melanoma, and played an important role in the Collaborative Ocular Melanoma Study sponsored by the National Eye Institute.

The Center's clinical goal is successful treatment of the primary eye tumor. Patients diagnosed with ocular melanoma may be offered highly sophisticated treatment plans coordinated with UCLA radiation physicists and radiation oncologists. Patients may also qualify to participate in clinical research studies in partnership with the UCLA Jonsson Comprehensive Cancer Center. The Center's primary research goal is to gain a fundamental understanding of the molecular biology of metastatic ocular melanoma. In addition to providing genetic prognostic information to patients on their risk of tumor metastasis, the Center has identified key genes associated with metastatic tumors.

Optic Neuropathy Center

Under the direction of **Dr. Anthony C. Arnold**, the Optic Neuropathy Center provides multidisciplinary consultation, diagnosis, and treatment for patients with complex diseases involving the optic nerve. Established in 1991, the Center incorporates specialized facilities and equipment for diagnostic testing and offers consultation from neuro-ophthalmologists, orbital surgeons, neurologists, neuro-radiologists, and neurosurgeons.

Patients referred to the Optic Neuropathy Center receive advanced diagnostic testing of the orbit and optic nerve to assist in evaluation. Extensive

analysis of diagnostic data, together with information from the patient's medical history and comprehensive physical examination, enables Center physicians to determine the nature of the disease and devise a treatment plan. Treatment may be medical or surgical depending on the nature of the referral and the patient's disease status. As part of the Center's clinical research effort, physicians are refining disease classifications along with diagnostic and treatment approaches to further the field of optic neuropathy and improve options for patients with these complex disorders.

Orbital Disease Center

The Orbital Disease Center, under the direction of **Drs. Daniel B. Rootman** and **Robert Alan Goldberg**, was founded in 1991. The Center brings multidisciplinary expertise to the treatment and study of orbital diseases arising from trauma, cancer, inflammation, and infection. Care is organized around a team of experts in ophthalmology, interventional neuroradiology, neurosurgery, head and neck surgery, radiation oncology, and craniofacial surgery, bringing to the treatment of orbital diseases a depth of knowledge and experience not available elsewhere in Southern California.

The Center provides both medical and surgical management of orbital diseases. The team performs procedures that are not usually available in the community, including orbital decompression, microsurgery for orbital apical tumors, optic canal decompression, combined interventional neuroradiology procedures for vascular tumors, and bony reconstruction to address traumatic or congenital defects. The Center has an active program in thyroid eye disease, where new surgical techniques are evaluated, and basic science research is carried out to advance understanding about the disease. A fellowship program trains future leaders, and teaching courses draw international audiences of highly trained orbital specialists to learn the latest advances in the field.

UCLA Laser Refractive Center

The UCLA Laser Refractive Center is under the direction of **Dr. David Rex Hamilton**. Founded in 1991, the Center specializes in refractive surgery of both the cornea and lens of the eye, including clinical and research applications of new laser technology. The Center is one of a few in the United States to pioneer investigations into laser eye surgery.

The UCLA Laser Refractive Center offers all cornea refractive procedures, including LASIK and LASEK/PRK, astigmatic keratotomy, conductive keratoplasty, and intracorneal ring implantation. Advanced intraocular lens (IOL) procedures are also available, including presbyopia-correcting IOLs (multifocal and accommodating), toric IOLs, and phakic IOLs. Patients referred to the Center undergo a complete ocular examination that includes corneal topographic mapping, wavefront analysis, and corneal biomechanical measurements to identify conditions that may interfere with surgical correction of refractive errors. Candidates for laser or intraocular lens surgery receive intensive education to understand the benefits, risks, and alternatives to surgery. Participation in clinical trials for new refractive devices and techniques to treat nearsightedness, farsightedness, and presbyopia may be an option for qualified patients. For more information about the UCLA Laser Refractive Center, go to: www.uclaser.com and lasik.ucla.edu.

Vision Genetics Center

Initially established in 1978 as the UCLA Retinitis Pigmentosa Registry, the Vision Genetics Center, under the direction of **Dr. Michael B. Gorin**, is an integrated clinical and research program that addresses the full spectrum of hereditary eye disorders. Center members, representing multiple disciplines, combine their efforts to understand the underlying molecular basis of a broad range of ocular conditions, including those involving the development of the eye, cornea, lens, extraocular muscles, retina, vitreous, and optic nerve. Areas of interest include both simple inherited conditions caused by alterations in single genes, as well as conditions in which multiple genetic variations and other risk factors play a role.

The Center offers patients and their family members state-of-the-art diagnosis and care of the hereditary eye or vision condition. Services include genetic counseling, and when appropriate, DNA testing either as a clinical diagnostic service, a research program, or in combination. The Center's faculty members collaborate with a number of genetic research groups around the world to ensure that patients can participate in the most advanced research for their particular condition.

During the past year, the Center has initiated involvement in a natural history study and clinical trial for gene therapy for choroideremia and a therapeutic clinical trial for Stargardt Disease.

Low-vision devices, available from the Vision Rehabilitation Center, help patients adapt to their visual restrictions.

Vision Proteomics Center

Genes encode the sequences of proteins, and knowledge of the structure and function of these proteins is required to unlock the secrets of the cell. That task is now set before current and future generations of scientists, and a new field of study, *Proteomics*, has been born. It is only through an understanding of protein function at the molecular level that researchers can learn the fundamental origins of disease and develop rational therapeutic designs to correct defects in the molecular machinery.

The Vision Proteomics Center at the Stein Eye Institute, under the direction of **Dr. Wayne L. Hubbell**, with researchers **Drs. Ben J. Glasgow, Dean Bok, Joseph Horwitz, and Gabriel H. Travis**, has pioneered the development of site-directed spin labeling—the only one of its kind in the world, ushering in a new era of exploration of structure/function relationships in proteins. Research groups at the Stein Eye Institute, departments at UCLA, and other major institutions throughout the United States and abroad, are taking advantage of the singular opportunities provided by the Vision Proteomics Center.

Vision Rehabilitation Center

The Vision Rehabilitation Center, under the direction of **Dr. Melissa W. Chun** with **Dr. Steven D. Schwartz** as medical advisor, was established to provide rehabilitation to maximize visual function and quality of life of patients with low vision, defined as best corrected vision of 20/70 or worse in the better eye. These outcomes are accomplished with a rehabilitation plan tailored to each patient's specific needs and goals.

The Center provides assistance in the form of patient consultation and training, including reading and computer training, as well as evaluation with the latest low-vision devices that can help patients adapt to their visual restrictions. The Center utilizes a wide array of technologically advanced devices, such as magnifiers, telescopes, and digital and computer technology. Customized for each patient's individual needs, services may range from simple solutions to specialized approaches. One unique feature of the Center is a special "lending library" of select low-vision devices that enables patients to try devices at home or in the office prior to purchase. When appropriate, referrals are provided to assist independent living through occupational therapy and orientation and mobility training.



The Ophthalmology Clinical Laboratories provide precise measurements, photographs, and quantitative studies of the eye and the visual system. Quantitative information of this type enhances patient care by increasing the accuracy of diagnosis and enlarging the parameters employed to assess the clinical course and effectiveness of treatment. Additionally, the clinical laboratories expand the scope of treatment alternatives, promote clinical research, and generally augment the effectiveness of ophthalmic disease management. The laboratories are available to all ophthalmologists in the community.

Corneal Diagnostic Laboratory

The Corneal Diagnostic Laboratory, under the direction of **Dr. Anthony J. Aldave**, offers a comprehensive array of corneal imaging modalities. Services include imaging of the anterior and posterior corneal surfaces with the Marco OPD-Scan III and Optovue RTVue, and imaging of the corneal endothelium for assessment of corneal endothelial cell morphology and density using the KONAN CellChek XL specular microscope. Full-thickness confocal microscopic imaging of the cornea, a useful tool in the diagnosis of suspected fungal, acanthamoebic, and other parasitic infections of the cornea, is performed with the Heidelberg HRT3 confocal microscope. This instrument and the Optovue RTVue can also perform optical pachymetry to noninvasively measure LASIK residual bed thicknesses and flap thicknesses as well as evaluate the LASIK interface for possible infections, diffuse lamellar keratitis, and ingrowth.

Glaucoma Photography Laboratory

The Glaucoma Photography Laboratory, under the direction of **Dr. Joseph Caprioli**, provides specialized photographs for new and follow-up patients to assist the ophthalmologist in the management of patients with glaucoma. The GDX Nerve Fiber Analyzer utilizes polarized light in place of dilation to measure the thickness of the nerve fiber layer. This test is particularly useful in diagnosing new glaucoma. Heidelberg retinal tomography, using confocal laser light, measures additional parameters of the optic nerve and provides more information on the nerve fiber layer. Optical coherence tomography utilizes reflected light to measure the nerve fiber layer as well as to measure macular holes as a staging procedure for surgical repair. An ophthalmic fundus camera photographs the optic nerve in stereo. The Laboratory is conducting clinical studies to evaluate the effectiveness of each photographic modality in terms of predictive accuracy and early detection of glaucoma.

Live Imaging and Functional Evaluation (LIFE) Core Laboratory

The Live Imaging and Functional Evaluation (LIFE) Core Laboratory is jointly supervised by **Drs. Steven Nusinowitz** and **Alapakkam Sampath**. The LIFE Module directors are committed to the provision of state-of-the-art noninvasive in vivo imaging and functional analysis of animal models of ocular disease and treatments. Testing provided by the module includes full-field and multi-focal electroretinography (ERG), pattern electroretinography (pERG), and flash and pattern visually-evoked cortical potentials (fVECP and pVECP, respectively). For all of these tests, the ERG component of interest is extracted from the waveform targeting a specific cell type of interest. Structural analysis is provided by direct fundus imaging, auto-fluorescence imaging, angiography, and optical coherence tomography (OCT).



Ocular Motility Clinical and Basic Science Laboratory

The Ocular Motility Clinical and Basic Science Laboratory, under the direction of **Dr. Joseph L. Demer**, records and quantitatively analyzes eye movement abnormalities resulting from ocular and neurological disorders, such as ocular myasthenia gravis. Several types of tests are performed. The Hess test utilizes specialized eye charts and lenses to assist in the diagnosis of a number of problems, including double vision. Magnetic scleral search coil techniques are utilized in clinical research studies to detect fine movements not evident through normal visual examination. Another test involves the visual recording of eye movement using a video camera. The Laboratory also engages in basic science research to further understanding of eye movement, as well as diseases of the eye, brain, and muscles, and related tissues of the inner ear.

Ophthalmic Photography Clinical Laboratory

The Ophthalmic Photography Clinical Laboratory, under the direction of **Dr. Tara A. McCannel**, provides a wide array of photographic techniques important in patient care, research, and teaching. The primary purpose of ophthalmic photography in patient care is to record the present state of the eye, and in cases of abnormality, to establish a baseline and monitor the patient's condition over time. Patient care services include photographic documentation of anterior segment diseases involving corneal problems like growths, infection, and trauma; photographs of ocular motility to record abnormalities in eye movement; fundus photography, which captures pictures of the retina; and diagnostic testing using fluorescein and indocyanine green angiography, which records the dynamics of blood flow in

the eye. The Laboratory also supports the research and teaching activities of the Stein Eye Institute by preparing and duplicating graphic materials for presentation and publication.

Ophthalmic Ultrasonography Clinical Laboratory

The Ophthalmic Ultrasonography Clinical Laboratory, directed by **Dr. Steven D. Schwartz**, performs clinical examinations that are useful in diagnosing both ocular and orbital eye diseases. Diagnostic examinations include standardized A-scan, B-scan, and ultrasound biomicroscopy. Standardized A-scan is useful in tissue differentiation and is commonly employed to diagnose ocular and orbital tumors, including choroidal melanoma. B-scan provides location and contour information and is particularly useful in differentiating vitreous membranes from retinal detachment. Ultrasound biomicroscopy provides exquisitely detailed, high-resolution views of the anterior segment of the eye and is a critical tool for the evaluation of ocular pathology, especially in opaque corneas.

Biometry and intraocular lens calculations are also performed in the Laboratory. Biometry measures the axial eye length, anterior chamber depth, and lens thickness; intraocular lens calculations are performed to determine the power of the lens implant for cataract patients.

Perimetry Laboratory

The Perimetry Laboratory, under the direction of **Dr. Joseph Caprioli**, performs visual field examinations that determine the sensitivity of central and peripheral vision. Examinations are conducted with advanced Humphrey automated perimetry equipment. Testing detects visual field deficits associated with certain kinds of

eye diseases such as glaucoma, retinal disorders, and neuro-ophthalmic conditions. Utilizing pinpoints of light around a perimetry bowl, the test evaluates different areas of the field of vision. Test results are computerized and compared to a range of normal values by age group. Patterns of diminished fields of vision are related to specific eye diseases. Perimetry testing is employed for diagnostic purposes and to monitor visual field sensitivity over time, especially for glaucoma patients. Both standard and shortwave automated techniques are available, in addition to frequency-doubling perimetry and motion-detection perimetry.

Visual Physiology Clinical Laboratory

The Visual Physiology Clinical Laboratory, under the direction of **Drs. Michael B. Gorin** and **Steven Nusinowitz**, quantitatively evaluates the function of the retina and visual pathways. Patients are referred for functional testing to confirm a specific diagnosis, or in cases where the etiology is unknown, to rule out alternative diagnostic possibilities. Electrophysiological tests, including both the full-field and multifocal electroretinograms (ERG and mfERG), the electro-oculogram (EOG), and visually evoked cortical potentials (VECP), record electrical signals from different layers of the visual system to identify the site responsible for visual symptoms. Psychophysical tests require the participation of the patient in specific tasks to evaluate visual functions like color blindness, contrast sensitivity, and visual acuity. In many cases, both electrophysical and psychophysical tests are performed together to obtain the optimum amount of information for diagnosis.

Training Programs

The Stein Eye Institute and the UCLA Department of Ophthalmology jointly provide comprehensive training in ophthalmology and vision science to medical students, residents, and clinical and research fellows. The programs encompass the gamut of ophthalmic and vision science education, representing every level of training and incorporating a full range of subjects in the study of the eye. The residency program is rated one of the top in the country. A large patient population with diverse vision problems offers innumerable training opportunities for both residents and clinical fellows. The availability of more than 15 research laboratories ensures a wide choice of vision science projects for all trainees. Predoctoral and postdoctoral research fellows particularly benefit from the wealth of new and unfolding research generated by vision scientists at the Institute.



UCLA Medical Student Program

Each academic year, the UCLA Department of Ophthalmology and the Institute extend instruction to UCLA medical students in their second, third, and fourth years of instruction. Through lectures, small group discussions, and clinical experience, all students have numerous training sessions from which to gain knowledge about eye diseases and develop eye examination skills that should be known by all physicians, regardless of their specialties. Those students who are interested in ophthalmology as a career have additional learning opportunities in elective courses.

In their second year of instruction, all medical students attend a series of lectures distributed throughout their year-long Human Biology and Disease course, covering various topics related to eye diseases. Students also attend several afternoon workshops during which they learn eye examination skills and treatments for eye problems that can be managed by non-ophthalmologists. During their third year of instruction, medical students interested in additional training and experience can elect to spend two weeks of their surgical clerkship on the Ophthalmology Service, examining patients in clinic and observing eye surgeries. During the fourth year of instruction, a series of advanced clinical electives are available to medical students who plan eventually to practice ophthalmology as their specialty.

UCLA Medical Student Research Program

At the Stein Eye Institute, medical students have taken short-term laboratory and clinical research electives for decades. In addition, there is now a Medical Student Research Program that provides select medical students with a year-long opportunity to participate in laboratory or clinical research in the field of ophthalmology. Each year, a committee selects one or two medical student researchers to receive salary and research support for 12 months in the laboratory or clinical research area of the student's chosen mentor. The goal of the program is to encourage medical students to pursue careers in academic ophthalmology.

UCLA Ophthalmology Residency Program

The Department of Ophthalmology conducts an accredited three-year residency program for 24 residents; eight new residents begin training each July. The full breadth of ophthalmology training is offered, including experience in general ophthalmology and ophthalmic subspecialties. Training incorporates the resources of the UCLA Stein Eye Institute, Harbor-UCLA Medical Center, Olive View-UCLA Medical Center, and the Veterans Affairs Greater Los Angeles Healthcare System at West Los Angeles and Sepulveda. Every resident has exposure to each medical center during the course of training, thereby ensuring clinical experience with a wide range of problems and patient populations. Certification by the American Board of Ophthalmology is a natural objective of the program.

Clinical Rotations

Clinical rotations at the Stein Eye Institute include both general ophthalmology and subspecialties. In general, ophthalmology residents work as a team, handling clinics, emergencies, and walk-in patients. They also serve as an ophthalmology consult service for inpatients in the UCLA Medical Center. Residents assigned to subspecialty service rotations are provided with intensive exposure to the various divisions within the Department, working closely with faculty members in a private practice environment. At the UCLA-affiliated medical centers, residents work in teams that provide both general and subspecialty patient care.

Didactic Education

Residents receive didactic education in the classroom on an ongoing basis. Once each week, all residents attend a mandatory half-day program that includes faculty lectures that, over the course of the three-year program, cover each of the required subjects in the American Academy of Ophthalmology Basic and Clinical Sciences Course. These lectures are followed by Grand Rounds, which consist of presentation and discussion of specific patient cases, and faculty lectures on clinical topics related to ophthalmic subspecialties. Throughout the week, clinical conferences in ophthalmic subspecialties are held where problems are presented and discussed.

Surgery Training

Residents begin to perform surgery in their first year of training and continue to operate throughout their residency. Surgical cases are assigned commensurate with level of training and experience. First-year residents begin in the Institute's Microsurgery Laboratory, an organized surgical course that includes computerized surgical simulators. This facility is available to residents throughout their training. Residents first assist on selected surgical cases, and by the end of their residency, they are performing procedures independently.

Research

An understanding of and an appreciation for research are major prerequisites for assimilating future developments in ophthalmology. Accordingly, ophthalmic research is an integral component of residency training. Residents are expected to undertake independent investigation or to participate in ongoing clinical or basic science research projects in ophthalmology. Residents present the results of their work at the Stein Eye Institute Clinical and Research Seminar during their second and third years of residency. They are also encouraged to report their studies at regional and national meetings and publish their results in scientific journals. Residents with special clinical or research interests have an opportunity to use elective time to increase their exposure to a particular area of ophthalmology. This time can be spent with full-time or volunteer faculty at UCLA or at other institutions.

EyeMBA: Innovation in Medical Education

The Institute recently created another national first for medical education by working with the David Geffen School of Medicine at UCLA and the UCLA Anderson School of Management to develop EyeMBA, a master's of business administration degree that is earned in tandem with an ophthalmology residency—the only joint program of its kind.

EyeMBA was developed in recognition that future leaders in ophthalmology will need the financial, management, and measurement skills that are at the core of an MBA curriculum. Residents in the EyeMBA program gain skills that are broadly applicable to ophthalmologic leadership in academia, translational research, health system management, health care delivery, and the biomedical industry.

EyeSTAR Program

For physicians who are interested in academic careers and professional leadership as clinician-scientists, the Stein Eye Institute offers an Ophthalmology Specialty Training and Advanced Research Program, referred to as EyeSTAR, which offers vision science training combined with an ophthalmology residency. Appointees complete a residency program leading to certification in ophthalmology, as well as laboratory research experience leading to a doctorate, or postdoctoral training in the event that the trainee already has a doctorate. EyeSTAR trainees work under the guidance of a faculty advisory panel representing the trainee's clinical and research interests.

The unique program began in 1995 and is geared to physicians committed to academic careers in ophthalmology, combining basic science with clinical practice in a five-year or six-year curriculum. EyeSTAR graduates are trained to compete not just with clinical scientists but also with top basic scientists from all institutions. Trainees select their faculty mentors from the Vision Research Division of the Stein Eye Institute or from the David Geffen School of Medicine at UCLA, College of Letters and Sciences, School of Public Health, Clinical Scholars Program, and RAND Graduate School.

EyeSTAR is recognized by the National Eye Institute and the Association of University Professors of Ophthalmology as a model training program for clinician-scientists in ophthalmology.

UCLA Clinical Ophthalmology and Vision Science Fellowship Programs

The Stein Eye Institute offers particularly well-qualified persons the opportunity to receive fellowship training in specific areas of clinical ophthalmology or vision-science research.

Following successful completion of a residency program, a clinical fellowship combines outpatient, inpatient, and surgical experience in an ophthalmic subspecialty. The clinical fellow assumes increasing responsibility for patient care under the supervision of faculty members responsible for the program. In addition to receiving training from faculty, the fellow instructs medical students and residents. Research is considered an important aspect of specialty training and a major prerequisite for assimilating future developments in ophthalmology. Clinical fellows are expected to undertake independent investigation or to participate in one of the ongoing research projects in a field related to their specialty.

Vision-science fellowship training is laboratory based and offers both predoctoral and postdoctoral opportunities to trainees in specific areas of vision science that encompass a wide range of topics. Trainees work under the supervision of Institute faculty members who are engaged in basic science research and have active laboratories. The scope and nature of the training program for each predoctoral or postdoctoral fellow is developed by the trainee and his/her faculty mentor.

Fellowship in Cornea—External Ocular Diseases and Refractive Surgery

Under the direction of **Drs. Anthony J. Aldave, Sophie X. Deng, David Rex Hamilton, and Kevin M. Miller**, one-year fellowships are offered in the study of diseases of the cornea, external eye, anterior segment, and refractive surgery. Clinical experience consists of participation in the cornea faculty practices, including surgery, and in the care of emergency cornea

cases at the Stein Eye Institute. Fellows work in the microsurgical laboratory and assist in teaching microsurgical skills to ophthalmology residents. Under the direction of faculty, fellows also perform primary surgical procedures in the UCLA Laser Refractive Center. In addition to in-depth training at the Institute, fellows provide medical and surgical care to patients at the Veterans Affairs Greater Los Angeles Healthcare System at West Los Angeles and at Harbor-UCLA Medical Center. Fellows typically complete an original clinical or laboratory research project, and frequently co-author a book chapter or review during their training.

Fellowship in Glaucoma

Under the direction of **Drs. Joseph Caprioli, Anne L. Coleman, JoAnn A. Giaconi, Simon K. Law, and Kouros Nouri-Mahdavi**, the one-year or two-year glaucoma fellowship provides clinical and laboratory experience in glaucoma diagnosis and management. Fellows gain clinical experience by examining patients in the consultation suite and participating in the clinical and surgical management of patients. Fellows work in the Glaucoma Microsurgery Laboratory, participate in microsurgery courses, assist in the Glaucoma Clinic, and develop expertise in the various diagnostic techniques used in glaucoma treatment through preceptor-type relationships with faculty. Fellows participate in glaucoma teaching at the Stein Eye Institute and affiliated institutions, present cases at teaching rounds, and prepare presentations for regularly scheduled glaucoma conferences. Fellows also undertake at least one research project, which may be a clinical study or an applied research project in the laboratory, in cooperation with the faculty advisor.

Fellowship in Medical Retina

This combined Stein Eye Institute and Doheny Eye Institute one-year fellowship, under the co-directorship of **Drs. Michael B. Gorin and Srinivas R. Sadda**, provides clinical knowledge pertaining to the diagnosis and

management of a broad array of retinal disorders, including age-related macular degeneration, diabetic retinopathy, retinal vascular disease, inflammatory retinopathies, drug-related toxic retinopathies, and retinal and macular degenerations and dystrophies. Fellows are instructed in the proper use and interpretation of non-invasive diagnostic tools, and training includes genetic counseling and the proper use of molecular genetic diagnostics. Fellows gain experience with a diverse set of interventional skills, including a wide spectrum of retinal laser procedures and periorcular and intravitreal injection of various classes of drugs.

Fellows divide their time among the clinical practices of Drs. Gorin, **David Sarraf**, and **Colin A. McCannel** within the Division of Retinal Disorders and Ophthalmic Genetics, the Retina Division of the Doheny Eye Institute, as well as in the Retinal Diagnostics Unit and the Visual Physiology Laboratory directed by **Dr. Steven Nusinowitz** at UCLA. Dr. McCannel's clinic provides exposure to surgical retinal decision-making and management issues. The fellows also provide care and teach residents in retina subspecialty clinics at two UCLA-affiliated hospitals. Fellows are strongly encouraged to engage in translational clinical research and/or clinical trials and descriptive retrospective studies and develop an in-depth working knowledge of the current scientific literature of medical and genetic retina. They are expected to participate in genetic and imaging conferences as well as other relevant meetings.

Fellowship in Neuro-Ophthalmology

The one-year fellowship in neuro-ophthalmology, under the direction of **Dr. Peter A. Quiros**, involves a close preceptor-preceptee relationship, participation in teaching rounds, and work in the private consultation suite. The David Geffen School of Medicine at UCLA maintains major clinical and research programs in neurology, neurosurgery, and neuroradiology. Fellows attend the weekly Neurology and

Neurosurgery Grand Rounds, take an active part in seeing relevant in-patient consultations throughout the Medical Center, and assist in selected surgical procedures of interest to neuro-ophthalmologists. Attendance at the weekly neuroradiology teaching conferences is encouraged. Time is allotted for scientific reading and for research activities. Participation in clinical research, such as studies of eye movement disorders and disturbances of visual pathways, is expected.

Fellowship in Ophthalmic Pathology

Under the direction of **Dr. Ben J. Glasgow**, this fellowship provides preparation for an academic career in ophthalmic pathology. One-year, two-year, and three-year training programs are available depending on the background of the applicant. Training encompasses many aspects of ophthalmic pathology. Fellows may choose between a research-based or clinical-based curriculum. Clinical fellows gain expertise in surgical pathology; autopsy pathology; cytology, including fine-needle aspiration; electron microscopy;

immunohistochemistry; DNA *in situ* hybridization; Southern blot analysis; and polymerase chain reaction techniques for diagnostic work. The fellowship programs are individualized according to the credentials and capabilities of each fellow.

Fellowship in Orbital and Ophthalmic Plastic Surgery

Fellowships in orbital and ophthalmic plastic surgery, under the overall supervision of **Drs. Robert Alan Goldberg** and **Jonathan Hoenig**, provide training for ophthalmologists who are interested in specializing in orbital and adnexal disorders, and in aesthetic and reconstructive orbitofacial surgery. Fellows participate in orbital and ophthalmic plastic surgery outpatient consultation, inpatient care, and surgical procedures at the Stein Eye Institute and affiliated hospitals. They also participate extensively in the teaching and research activities of the Orbital and Ophthalmic Plastic Surgery Division. In addition to publishing results of original research in peer-reviewed scientific journals,

fellows complete a formal thesis that partially satisfies the membership requirements of the American Society of Ophthalmic Plastic and Reconstructive Surgery. International research fellows also participate in the program annually. The two-year fellowship program is approved by the American Society of Ophthalmic Plastic and Reconstructive Surgery.

Fellowship in Pediatric Ophthalmology and Strabismus

The division of Pediatric Ophthalmology and Strabismus offers one-year fellowships, under the directorship of **Drs. Sherwin J. Isenberg** and **Joseph L. Demer**. Clinical experience consists of supervised participation in the ophthalmic care of pediatric patients seen at the Stein Eye Institute, Harbor-UCLA Medical Center, and Olive View-UCLA Medical Center. Specific activities include participation in University Ophthalmology Associates, the Nursery and Neonatal Intensive Care Units, Ophthalmic Plastic and Reconstructive Surgery Service, and the Pediatric Retinal Service. Other activities in pediatric ophthalmology include experience in the private consultation suites and participation in pediatric cases that are handled through other services. Fellows may collaborate with vision scientists, including biochemists, physiologists, pathologists, and anatomists, on research projects of mutual interest.

Fellowship in Vision Science

Predocctoral and postdoctoral fellowships in vision science are offered to individuals who have an interest in specific research areas being pursued by Institute faculty in highly specialized laboratory environments. These fellowships are supported either by individual funds available to Institute professors or as part of a special program offered under the auspices of a National Eye Institute Vision Science Training Grant directed by **Dr. Gabriel H. Travis**.

Predocctoral fellows take a defined program of core courses and carry out eye-related research, obtaining doctorates in about six years. Fellows



Training Programs

are required to present their research at informal and formal seminars, and are encouraged to participate in national and international meetings and publish scientific papers. They gain a broad background in the vision sciences by interacting with members of adjacent laboratories and collaborating with faculty members other than their own preceptors. Postdoctoral research fellowships are offered for one to three years. Each one is unique with research programs established according to mutual agreement between trainees and mentors. Research areas for postdoctoral fellows include molecular biology, genetics, biophysics, biomechanics, cell biology, eye development, and biochemistry. Upon completion of their fellowships, trainees usually pursue careers in academia or industry.

Fellowship in Vitreoretinal Diseases and Surgery

Under the co-directorship of **Drs. Allan E. Kreiger** and **Steven D. Schwartz**, the Vitreoretinal Diseases and Surgery Fellowship in the Department of Ophthalmology at the Stein Eye Institute is a two-year program designed to provide medical and surgical training and clinical- and vision-science research opportunities related to vitreoretinal disease. Major components of the fellowship relate to diabetic retinopathy, diseases of the macula and retina, hereditary retinal degenerations, ocular trauma, ophthalmic oncology, rhegmatogenous retinal disease, vitreoretinal surgery, pediatric retinal disease, and diagnostic imaging. Clinical training includes the prevention, diagnosis, and treatment of retinal, choroidal, vitreous, and related ocular disease. Fellows participate in retinal clinics and surgical procedures at the Stein Eye Institute and four UCLA-affiliated hospitals. Clinical, laboratory, or translational research is also

encouraged. Other activities include teaching of vitreoretinal diseases at the Stein Eye Institute and affiliated institutions and case presentations at teaching sessions. The program also includes the participation of several international fellows.

International Fellowship and Exchange Program

To promote and encourage research and education interaction with ophthalmology institutions throughout the world, the Stein Eye Institute offers an International Ophthalmology Fellowship and Exchange Program consisting of one-year to two-year fellowships under the supervision of specific Institute faculty. Candidates for these fellowships are nominated by prestigious institutions outside the United States and often hold academic positions within their own countries. Fellows participate in the clinical and research activities of ophthalmic subspecialties according to their training needs.





UCLA Department of Ophthalmology Volunteer and Consulting Faculty

Volunteer and consulting faculty—many of whom have contributed to the Department’s educational mission for more than 25 years—teach courses, participate in conferences, and bring hands-on practical experience and common-sense guidance that is invaluable to young ophthalmologists in training.

Volunteer Faculty

Clinical Professors of Ophthalmology

J. Bronwyn Bateman, MD
Henry I. Baylis, MD (Senior Status)
*Founding Chief of the Orbital and Ophthalmic
Plastic Surgery Division*
Bruce B. Becker, MD, PC
Michael S. Berlin, MD
William P. Chen, MD
Paul Deiter, MD (Senior Status)
Uday Devgan, MD, FACS, FRCS
*Chief of Ophthalmology
Olive View-UCLA Medical Center*
Donald Dickerson, MD (Senior Status)
Donald S. Fong, MD, MPH
Leland M. Garrison, MD
Thomas A. Hanscom, MD
John D. Hofbauer, MD
Kenneth J. Hoffer, MD
C. Richard Hulquist, MD
Barry M. Kerman, MD
Roger A. Kohn, MD
Howard R. Krauss, MD
Benjamin C. Kwan, MD
Jeremy Levenson, MD (Senior Status)
Jonathan I. Macy, MD
Ezra Maguen, MD
Robert K. Maloney, MD
Samuel Masket, MD
Anthony B. Nesburn, MD
Leon G. Partamian, MD
George Primbs, MD (Senior Status)
Yaron S. Rabinowitz, MD
Teresa O. Rosales, MD
Robert J. Schechter, MD (Senior Status)
Stephen Seiff, MD (Senior Status)
Alan L. Shabo, MD
Norman Shorr, MD
Roger W. Sorenson, MD (Senior Status)
Howard H. Stone, MD (Senior Status)

Associate Clinical Professors of Ophthalmology

Gerrald Barron, MD (Senior Status)
Arnold Barton, MD (Senior Status)
Kevin J. Belville, MD
Louis Bernstein, MD (Senior Status)
W. Benton Boone, MD
Harvey Brown, MD
Andrew E. Choy, MD
Melissa W. Chun, OD
Peter J. Cornell, MD
Bernard Davidorf, MD (Senior Status)
Paul B. Donzis, MD
David R. Fett, MD (Senior Status)
Kathryn M. Gardner, MD
Donald I. Goldstein, MD
Michael J. Groth, MD
Andrew Henrick, MD
Edwin P. Hill, MD
Jonathan A. Hoenig, MD
Richard H. Hoft, MD
David F. Kamin, MD
Stanley Kopelow, MD (Senior Status)
Joseph Lambert, MD (Senior Status)
Brian L. Lee, MD
Steven Leibowitz, MD
Gene Matzkin, MD (Senior Status)
Joan E. McFarland, MD
James McKinzie, MD (Senior Status)
Alan Norton, MD (Senior Status)
John F. Paschal, MD (Senior Status)
Sidney Penn, MD (Senior Status)
Firas Rahhal, MD
George M. Rajacich, MD
Michael Reynard, MD
David S. Robbin, MD
David E. Savar, MD
Timothy V. Scott, MD
Albert Sheffer, MD
James D. Shuler, MD
Yossi Sidikaro, MD, PhD
Matthew Sloan, MD
Ronald J. Smith, MD
Alfred Solish, MD, MS
Kenneth D. Steinsapir, MD
Sadiqa Stelzner, MD, MA, FACS
William C. Stivelman, MD (Senior Status)
Hector L. Sulit, MD
Kamal A. Zakka, MD

Assistant Clinical Professors of Ophthalmology

David H. Aizuss, MD
Malvin B. Anders, MD
Richard K. Apt, MD
Reginald G. Ariyasu, MD, PhD
Arthur A. Astorino, MD
Mark A. Baskin, MD
Arthur Benjamin, MD
Katherine L. Bergwerk, MD
Betsy E. Blechman, MD
Cynthia A. Boxrud, MD
Amarpreet S. Brar, MD
Almira W. Cann, MD, PhD
Arnett Carraby, MD
Vicki K. Chan, MD
Andrew M. Chang, MD
Candice Chen, MD
Thomas B-H. Choi, MD
Milton W. Chu, MD
Robert A. Clark, MD
Charles A. Cooper, MD
Yadavinder P. Dang, MD
Jonathan M. Davidorf, MD
John L. Davidson, MD
Sanford S. Davidson, MD
Louise Cooley Davis, MD
Farid Eghbali, OD
Troy R. Elander, MD
Naomi L. Ellenhorn, MD
Calvin T. Eng, MD
Robert E. Engstrom, MD
Doreen T. Fazio, MD
Sanford G. Feldman, MD
Laura E. Fox, MD
Ronald P. Gallemore, MD
George H. Garcia, MD
Leslie C. Garland, MD (Senior Status)
W. James Gealy, Jr., MD
Damien Goldberg, MD
Lawrence “Tim” Goodwin, MD
Lawrence H. Green, MD (Senior Status)
Richard Havunjian, MD
Man M. Singh Hayreh, MD
Matthew L. Hecht, MD
David A. Hollander, MD
Jeffrey Hong, MD
Catherine J. Hwang, MD, MPH
Morton P. Israel, MD
Steven J. Jacobson, MD
Batool Jafri, MD
Aarchan Joshi, MD
Véronique H. Jotterand, MD
J. David Karlin, MD
David S. Katzin, MD

**Assistant Clinical Professors
of Ophthalmology** continued

James F. Kleckner, MD (Senior Status)
 Jerome R. Klein, MD
 Craig H. Kliger, MD
 Howard E. Lazerson, MD (Senior Status)
 Robert T. Lin, MD
 Joanne E. Low, MD
 Bryant J. Lum, MD
 Michael C. Lynch, MD
 M. Polly McKinstry, MD
 Ashish M. Mehta, MD
 Kenneth J. Miller, MD (Senior Status)
 David R. Milstein, MD
 Ronald L. Morton, MD
 Roger L. Novack, MD, PhD
 David Paikal, MD
 Alpa A.S. Patel, MD
 James H. Peace, MD
 Gilbert Perlman, MD (Senior Status)
 Cheryl J. Powell, MD
 John R. Privett, MD (Senior Status)
 Laurence N. Roer, MD
 Gerald Sanders, MD (Senior Status)
 Aaron M. Savar, MD
 Barry S. Seibel, MD
 Kayar Shah, MD
 Meryl Shapiro-Tuchin, MD
 David M. Shultz, MD
 Eliot B. Siegel, MD
 Lance M. Siegel, MD
 John D. Slaney, MD
 Robert J. Smyth, MD
 Kenneth O. Sparks, MD
 Mehryar "Ray" Taban, MD, FACS
 Homayoun Tabandeh, MD
 Robert C. Tarter, MD
 Debra G. Tennen, MD
 Teddy Y. Tong, MD
 Sterling M. Trenberth, MD (Senior Status)
 Robert C. Tudor, MD (Senior Status)
 Henry E. Ullman, MD
 Tay J. Weinman, MD (Senior Status)
 Irwin S. Weiss, MD (Senior Status)
 Sidney J. Weiss, MD
 Scott Whitcup, MD
 David L. Williams, MD (Senior Status)
 Jeffrey V. Winston, MD
 David M. Winters, MD (Senior Status)
 David L. Wirta, MD
 Barry J. Wolstan, MD
 Wilson C. Wu, MD, PhD
 Michael C. Yang, MD
 Patrick C. Yeh, MD
 Richard H. Yook, MD (Senior Status)
 Peter D. Zeegen, MD (Senior Status)

**Clinical Instructors
in Ophthalmology**

Eduardo Besser, MD
 Maria Braun, MD
 Neil D. Brouman, MD
 Stephen S. Bylsma, MD
 Andrew Caster, MD
 Joseph H. Chang, MD
 Hajir Dadgostar, MD
 John J. Darin, MD (Senior Status)
 Paul J. Dougherty, MD
 Sean Dumars, MD
 Daniel Ebroon, MD
 Brad S. Elkins, MD
 Satvinder Gujral, MD
 Lawrence M. Hopp, MD, MS
 Anisha J. Judge, MD
 Jason Jun, MD
 Rajesh Khanna, MD
 Julie A. King, MD
 Mark H. Kramar, MD
 Daniel Krivoy, MD
 Laurie C. McCall, MD
 Jayantkumar Patel, MD
 Susan S. Ransome, MD
 Steven H. Rauchman, MD
 Richard H. Roe, MD
 Louis M. Savar, MD
 Abraham Soroudi, MD
 Sharon N. Spooner-Dailey, MD
 Rosalind Vo, MD
 Mark Volpicelli, MD
 Mathew Wang, MD
 Peter H. Win, MD
 Andrew Young, MD

**Consulting Members of
the Stein Eye Institute**

Robert W. Baloh, MD
*Professor of Neurology and Surgery
(Head and Neck)*

Ferdinand V. Coroniti, PhD
*Professor, Department of Physics
and Astronomy*

David Eisenberg, DPhil
*Investigator, Howard Hughes Medical Institute
Paul D. Boyer Professor of Biochemistry
and Molecular Biology
Professor, Departments of Chemistry
and Biochemistry, and Biological Chemistry
Molecular Biology Institute*

Alan M. Fogelman, MD
*Castera Professor and Executive Chair
Department of Medicine*

Alan D. Grinnell, PhD
*Professor of Physiology and
Physiological Science
Director, Jerry Lewis Neuromuscular
Research Center
Director, Ahmanson Laboratory
of Neurobiology*

C. Kumar Patel, PhD
*Professor, Department of Physics
and Astronomy*

Leonard H. Rome, PhD
*Senior Associate Dean for Research
Professor of Biological Chemistry*

Peter C. Whybrow, MD
*Judson Braun Professor and Executive Chair
Department of Psychiatry and
Biobehavioral Sciences
Director and Physician in Chief
Neuropsychiatric Institute*

Residents and Fellows

Residents and Fellows

Residents

Third-Year Residents 2014–2017

Joseph Christenbury, MD
Melinda Fry, MD
Janet Lee, MD
Theodor Sauer, MD
Daniel Su, MD
Andrew Tye, MD
Rany Woo, MD
Chengjie Zheng, MD

Second-Year Residents 2015–2018

Todd H. Driver, MD
Juliet O. Essilfie, MD
Sean F. Garrity, MD
Wei “Wayne” Gui, MD
Shawn Lin, MD
Erika T. Tanaka Friesen, MD
Ye Elaine Wang, MD
David Xu, MD

First-Year Residents 2016–2019

Christine L. Bokman, MD
Benjamin C. Campbell, MD
Elisha C. Garg, MD
Kirk K. Hou, MD
Patrick J. Lee, MD
Xiongfei Lu, MD
Eric Shieh, MD
Victoria L. Tseng, MD, PhD (EyeSTAR)

EyeSTAR Trainees

Tamara L. Lenis, MD
Anh H. Pham, MD, PhD
David Stark, MD, PhD
Victoria Tseng, MD, PhD
Qing Wang, MD, PhD

Clinical Fellows

Corneal and External Ocular Diseases and Refractive Surgery

Saba Al-Hashimi, MD
David Truong, MD
Victoria Yom, MD
(Doheny Eye Center UCLA)

Glaucoma

Brett McKnight, MD
(Doheny Eye Center UCLA)
Nathaniel Sears, MD
Laura Vickers, MD

Medical Retina and Ophthalmic Genetics

Bora Chae, MD
An Huynh, MD

Neuro-Ophthalmology

Melinda Chang, MD

Orbital and Ophthalmic Plastic Surgery

Wenjing Liu, MD
Sathyadeepak Ramesh, MD

Pediatric Ophthalmology and Strabismus

Rui Zhang, MD

Uveitis and Inflammatory Eye Disease

None

Vitreoretinal Diseases and Surgery

Robert Lalane, MD
Aaron Nagiel, MD, PhD
Christian Sanfilippo, MD
Sanket U. Shah, MD

International Fellows

Cornea Research

Patricio Dodds, MD
Argentina
Pitchaya Prapaipanich, MD
Thailand
Pornlada Sunlakaviset, MD
Thailand

Comprehensive Ophthalmology/ Cataract

None

Glaucoma

Reza Alizadeh, MD
Iran
Ramin Daneshvar, MD
Iran
Nima Fatehi, MD
Iran
Lilian Mohamed, MD
Egypt
Nucharee Parivisutt, MD
Thailand

Medical Retina and Ophthalmic Genetics

Mayss Al-Sheikh, MD
(Doheny Eye Center UCLA)
Germany
Juan Pablo Davila Gonzalez, MD
Mexico
Mansour Rahimi, MD
Iran

Neuro-Ophthalmology

None

Orbital and Ophthalmic Plastic Surgery

Adit Gupta, MD
India

Pediatric Ophthalmology

Diana Cifuentes Zapata, MD
Colombia
Marcela Lonngi, MD
Colombia
Ghada Rajab, MD
Egypt

Pathology (Eye)

None

Uveitis

None

Visual Physiology

None

Vitreoretinal Diseases and Surgery

Andrea Govetto, MD
Italy
Amirhossein Hariri, MD
(Doheny Eye Center UCLA)
Iran
Eva Platner, MD
Israel
Hiroto Terasaki, MD
(Doheny Eye Center UCLA)
Japan
Akihito Uji, MD, PhD
(Doheny Eye Center UCLA)
Japan
Swetha Velaga, BS
(Doheny Eye Center UCLA)
India

Predoctoral Research Fellows

Kevin Eden
Katherine Fehlhaber
Christopher Griffis
Roni Hazim
Norianne Ingram
Margaux Kreitman
Alan Le
Ala Morshedian
Joseph Park
Gabriel Pollock
Gabriela Sendek
Tongzhou Xu

Postdoctoral Research Fellows

Negin Ashki Ghouravan, MD, PhD
Edouard Baulier, PhD
Abhishek Chadha, PhD
Doug Chung, PhD
Sarah Dale, PhD
Aurelie Dos Santos, PhD
Matthias Elgeti, PhD
Antonio Escudero Paniagua, PhD
Sheyla Gonzalez-Garrido, PhD
Lei Gu, PhD
Michael Lerch, PhD
Hua Mei, PhD
Yu "Christie" Qin, PhD
Jonathan Rodriguez, PhD
Charles Avery Sader, PhD
Kwang Sup "Andrew" Shin, PhD
Kaushali Thakore-Shah, PhD
Ankita Umapathy, PhD
Stefanie Volland, PhD
Yanjie Wang, PhD
Chi Zhang, PhD
Wenlin Zhang, PhD



To inform participants of the latest advances in the field, the UCLA Department of Ophthalmology is committed to the education and training of residents, fellows, and basic scientists, as well as the ongoing training of practicing ophthalmologists. The 2016–2017 academic year presented a wealth of Institute educational events.

Ophthalmology and Vision Science Training Programs

Ophthalmology Basic and Clinical Science Course

Course Chairman:

Bartly J. Mondino, MD

This course is a major segment of the educational program for ophthalmology residents, as well as a review course for ophthalmologists. Sections are presented each year in a rotation designed to provide complete review of all sections in a two-year period. First-year residents participate in a more intensive curriculum in order to obtain a comprehensive foundation of ophthalmologic knowledge.

In 2016–2017, the following course components were offered:

Retina

Steven D. Schwartz, MD
September 7, 2016–November 9, 2016

Pediatric Ophthalmology

Joseph L. Demer, MD, PhD
November 16, 2016–January 25, 2017

Optics

Kevin M. Miller, MD
February 1, 2017–February 22, 2017

Neuro-Ophthalmology

Anthony C. Arnold, MD
March 1, 2017–April 26, 2017

Uveitis

Gary N. Holland, MD
May 3, 2017–June 14, 2017

Southern California Basic Cataract Surgery Course

October 29, 2016

Southern California Advanced Cataract Surgery Course

April 8, 2017

Course Director:

Kevin M. Miller, MD

The Southern California Basic and Advanced Cataract Surgery Courses are key components of the residency-training program, as well as a resource for practicing ophthalmologists. Both classroom and laboratory instruction are offered in the two courses, which cover in detail the procedural and anatomical components of modern cataract surgery.

22nd Annual Vision Science Conference

October 7–9, 2016

At this annual event, sponsored jointly by the Stein Eye Institute and the National Eye Institute Vision Science Training Grant, pre- and postdoctoral fellows and faculty discussed a wide range of topics in vision science research.

Ophthalmology Clinical Conferences

Coordinators:

Anthony C. Arnold, MD
Gary N. Holland, MD

The Clinical Conferences are offered in conjunction with the regular weekly Ophthalmology Basic and Clinical Science Course. These conferences review patient care activities of the UCLA Department of Ophthalmology, present general topics in ophthalmic science, and promote discussion of relevant aspects of ophthalmic pathology and pharmacy.

Study Groups

Focusing on specific topics in clinical ophthalmology, study groups meet regularly under the leadership of faculty members who are acknowledged specialists in their respective fields. The study groups are an integral part of the residency and clinical fellowship training programs and serve as an informal resource for practicing ophthalmologists in the community.

Cornea Conference

This conference meets bimonthly and includes full-time and volunteer clinical faculty and visitors from the community who discuss cornea cases presented by fellows and residents. The conferences are coordinated by Anthony J. Aldave, MD.

Glaucoma Conference

This weekly conference is designed to teach residents and fellows a basic understanding of the pathophysiology and clinical care of glaucoma. Faculty, fellows, and residents all participate in case and subject presentations and discussions. The conferences are coordinated by Joseph Caprioli, MD.

Neuro-Ophthalmology Conference

This conference meets bimonthly and includes full-time and volunteer clinical faculty and visitors from the community who discuss neuro-ophthalmology cases presented by fellows and residents. The coordinator for the year was Anthony C. Arnold, MD.

Oculoplastics Conference

This conference meets bimonthly and includes full-time and volunteer clinical faculty and visitors from the community who discuss oculoplastics and orbital cases presented by fellows and residents. The coordinator for the year was Robert Alan Goldberg, MD.

Ophthalmic Pathology Conference

Faculty and residents meet daily to review pathological findings from current ophthalmology cases. The coordinator for the year was Ben J. Glasgow, MD.

Pediatric Ophthalmology and Strabismus Conference

At monthly meetings rotating among Harbor-UCLA Medical Center, Olive View-UCLA Medical Center, and the Stein Eye Institute, difficult pediatric ophthalmology and strabismus cases are presented and discussed. These conferences were coordinated for the year by Sherwin J. Isenberg, MD, at Harbor-UCLA Medical Center, Federico Velez, MD, at Olive View-UCLA Medical Center, and Joseph L. Demer, MD, PhD, at the Stein Eye Institute.

Retinal Imaging Conference

Arranged by the clinical fellows in vitreoretinal studies, this conference convenes periodically to review current angiograms representing disease entities, unusual abnormalities, and controversial interpretations of angiographic findings. Steven D. Schwartz, MD, and other members of the Retina Division supervise the conference.

Vision Science Seminar Series

Coordinators:

Sophie X. Deng, MD, PhD
David S. Williams, PhD

This seminar series, conducted throughout the academic year, allows faculty within the Stein Eye Institute to present their research to other members of the Institute, thereby fostering the exchange of knowledge and cooperation. The series frequently includes presentations by eminent visitors to the UCLA campus.

Continuing Education Programs

Comprehensive Ophthalmology Review Course

February 9–12, 2017

Course Directors:

Sherwin J. Isenberg, MD
John A. Irvine, MD

The Stein Eye Institute and the Doheny Eye Institute sponsored the annual Comprehensive Ophthalmology Review Course. Developed to serve ophthalmology-training programs in Southern California, the program concentrated on the epidemiology, clinical presentation, diagnosis, and management of ophthalmological disease.

Stein Eye Institute Clinical and Research Seminar

June 9, 2017

Coordinators:

Anthony C. Arnold, MD
Joseph Caprioli, MD
Anne L. Coleman, MD, PhD
Robert Alan Goldberg, MD
Gary N. Holland, MD
John A. Irvine, MD
Bartly J. Mondino, MD
Stacy Pineles, MD
Alfredo Sadun, MD, PhD
Gabriel Travis, MD

Geared to physicians and basic scientists, this seminar is an intensive course in which UCLA and guest faculty present current concepts and recent advances in ophthalmology. The Jules Stein Lecture, the Bradley R. Straatsma Lecture, and the Thomas H. Pettit Lecture, which commemorate each doctor's contributions to ophthalmic science at UCLA and throughout the United States, are held in conjunction with this seminar and are among the academic highlights of the year.

48th Jules Stein Lecturer

David W. Parke II, MD
Chief Executive Officer and
Executive Vice President
American Academy of Ophthalmology

15th Bradley R. Straatsma Lecturer

David R. Williams, PhD
Dean for Research of Arts, Science,
and Engineering
William G. Allyn Professor of
Medical Optics
Director of the Center for Visual Arts
University of Rochester

15th Thomas H. Pettit Lecturer

Eduardo C. Alfonso, MD
Chairman of the Department
of Ophthalmology
Kathleen and Stanley J. Glaser Chair
in Ophthalmology
Director of the Bascom Palmer
Eye Institute
University of Miami
Miller School of Medicine

Research Contracts and Grants

Active Funding July 1, 2016–June 30, 2017

Vision Science Grants	Total Award
Anthony J. Aldave, MD Identification and Characterization of the Genetic Basis of PPCD National Eye Institute Duration: 12/1/12–11/30/17	\$250,000
Vision Restoration with a Collagen Crosslinked Boston Keratoprosthesis Unit Department of Defense (DOD) Sub-award from Massachusetts Eye and Ear Infirmary Duration: 9/1/15–8/31/17	\$50,492
Suraj P. Bhat, PhD Childhood Cataractogenesis: Heterogeneity of Gene Expression National Eye Institute Duration: 1/1/15–12/31/18	\$250,000
Joseph Caprioli, MD Clinical Research Program in Glaucoma Simms-Mann Family Foundation Duration: 7/1/14–6/30/18	\$50,000
Anne L. Coleman, MD, PhD UCLA Mobile Eye Clinic Child Vision Program LA County Children and Families First (First 5 LA) Duration: 7/1/13–9/30/17	\$1,082,500
Ocular Hypertension Treatment Study 20-Year Follow-Up: Clinical Center Grant National Eye Institute Sub-award from Washington University Duration: 7/1/16–6/30/18	\$41,788
Joseph L. Demer, MD, PhD Biomechanical Analysis in Strabismus Surgery National Eye Institute Duration: 5/1/16–4/30/20	\$388,772
Sophie X. Deng, MD, PhD Ex Vivo Expansion of Human Limbal Stem Cells for Transplantation National Eye Institute Duration: 9/1/12–8/31/17	\$250,000
Regeneration of a Normal Corneal Surface by Limbal Stem Cell Therapy California Institute for Regenerative Medicine (CIRM) Duration: 8/1/16–11/30/18	\$1,280,478
Debora B. Farber, PhD, DPhhc Edouard Baulier, PhD Patient-derived iPSCs, CRISPR/Cas and RPE-derived Exosomes for the Treatment of Ocular Albinism Vision of Children Duration: 6/1/16–5/31/19	\$157,484

Michael B. Gorin, MD, PhD

Natural History of the Progression of Choroideremia Study (Night)

Nightstarx

Duration: 6/18/15–4/11/18

\$51,695

IPS Model for Retinal Hemangioma Pathogenesis

VHL Family Alliance

Duration: 10/1/16–9/30/18

\$50,000

Gary N. Holland, MD

Macular Edema Treatment Trials Associated with MUST (META-MUST)

National Eye Institute

Sub-award from Johns Hopkins University

Duration: 9/30/14–1/31/18

\$33,160

Systemic Immunosuppressive Therapy for Eye Diseases

Cohort Study (SITE)

University of Pittsburgh

Duration: 3/2/16–3/2/21

Non-monetary Contract

Systemic Immunosuppressive Therapy for Eye Disease

(Cancer Surveillance and Research Branch/CCR)

University of Pittsburgh

Duration: 3/2/16–3/2/21

Non-monetary Contract

Joseph Horwitz, PhD

Analysis of Lens Crystallins and Cataractous Mutants

at High Hydrostatic Pressure

National Eye Institute

Duration: 4/1/14–3/31/19

\$150,000

Alex A. Huang, MD, PhD

Discovery and Characterization of Anterior Sclera Pathology in Glaucoma

National Eye Institute

Duration: 9/30/14–9/29/19

\$203,981

Research to Prevent Blindness Career Development Award

Research to Prevent Blindness, Inc.

Duration: 1/1/16–12/31/19

\$75,000

Validation of a Cephalad Fluid Shift Countermeasure

National Space Biomedical Research Institute

Sub-award from Baylor College of Medicine

Duration: 6/1/15–5/31/17

\$46,840

Wayne L. Hubbell, PhD

Molecular Basis of Membrane Excitation

National Eye Institute

Duration: 5/1/15–4/30/20

\$325,349

Michael Ip, MD

Studies of Comparative Treatments in Retinal Vein Occlusion 2 (SCORE 2)

National Eye Institute

Sub-award from Penn State University

Duration: 6/16/16–3/31/18

\$47,083

Bartly J. Mondino, MD

RPB Unrestricted Grant

Research to Prevent Blindness, Inc.

Duration: 1/1/12–12/31/17

\$115,000

Research Contracts and Grants

Kouros Nouri-Mahdavi, MD

Detection of Glaucoma Progression with Macular OCT Imaging
National Eye Institute
Duration: 7/1/12–6/30/17 \$212,166

Stacy L. Pineles, MD

Integrating Perceptual Learning Approaches into Effective Therapies
for Low Vision
National Eye Institute
Sub-award from University of California Riverside
Duration: 9/1/13–7/31/17 \$28,115

Pediatric Eye Disease Investigator Group (PEDIG)
JAEB Center for Health Research
Duration: 2/28/11–12/31/17 \$11,106

Roxana Radu, MD

The Role of Complement in Recessive Stargardt Disease
National Eye Institute
Distribution: 8/1/15–7/31/20 \$250,000

SriniVas R. Sadda, MD

Sears, Connie: Re-engineering the Screening and Staging of
Diabetic Retinopathy
Research to Prevent Blindness, Inc.
Duration: 1/1/17–12/31/17 \$30,000

Alapakkam P. Sampath, PhD

Molecular Basis of Photoreceptor Wiring
National Eye Institute (Multi-PI award with Scripps Clinic &
Research Foundation)
Duration: 5/1/17–4/30/22 \$91,444

Analyses of Retinal Circuits After Rod Rescue in a Mouse Model
of Human Blindness
National Eye Institute (Multi-PI award with University of Southern California)
Duration: 9/1/16–8/31/21 \$95,673

Experimental and Clinical Investigations of Retinal Stimulation
National Eye Institute
Sub-award from University of Michigan
Duration: 3/1/17–2/28/18 \$99,944

David Sarraf, MD

DRCR Protocol W: Intravenous Anti-VEGF Treatment for Prevention
of Vision Threatening Diabetic Retinopathy in Eyes at High Risk
JAEB Center for Health Research
Duration: 6/13/17–12/31/18 \$490,450

Diabetic Retinopathy Clinical Research Network
JAEB Center for Health Research
Duration: 6/13/17–12/31/18 Non-monetary Contract

Gabriel H. Travis, MD

The Role of Müller Cells in Visual Pigment Regeneration
National Eye Institute
Duration: 7/1/13–6/30/18 \$326,405

Vision Science Training Grant to Researchers at the Stein Eye Institute
National Eye Institute
Duration: 9/30/11–9/29/17 \$231,250

Instrumentation Grant for Stein Eye Investigators Bruce Ford and Anne Smith Bundy Foundation Duration: 8/16/11–8/15/17	\$90,695
Functional Characterization of RGR-OPSIN in Retinal Müller Cells National Eye Institute Distribution: 9/1/15–8/31/18	\$250,000
Irena Tsui, MD Ophthalmic Manifestations of Congenital Zika Virus Infection National Eye Institute Duration: 3/1/17–2/28/19	\$33,094
David S. Williams, PhD The Photoreceptor Cilium National Eye Institute Duration: 5/1/13–4/30/18	\$250,000
Photoreceptor Disk Membrane Morphogenesis National Eye Institute Sub-award from University of California, Santa Barbara Duration: 4/1/15–3/31/18	\$112,317
Stein Eye Institute Core Grant for Vision Research National Eye Institute Duration: 9/1/15–6/30/20	\$383,453
Xian-Jie Yang, PhD Neuroprotection Mechanism for Photoreceptors National Eye Institute Duration: 5/1/16–4/30/21	\$250,000
Professional Research Series	
Navid Amini, PhD Wearable Assistive Technology for Patients with Hemianopic Visual Field Loss Alcon Laboratories, Inc. Duration: 9/1/16–8/31/17	\$50,000
EyeSee: Mobile Assistive Technology for Hemianopic Patients Vodafone-US Foundation Duration: 7/1/16–6/30/19	\$66,653
Sonia Guha, PhD Role of Doublecortin in Axonal Misrouting in OA1 ^{-/-} Mice Vision of Children Duration: 7/1/14–3/15/20	\$144,987
Alejandra Young, PhD Identification of the OA1 Molecule Partners Critical for Axonal Guidance of RGCs Growth Cones (Proposal Continuation of Grant #20142326) Vision of Children Duration: 11/1/13–7/14/20	\$195,525

Research Contracts and Grants

Residents and Fellows

Abhishek Chadha, PhD (Vision-Science Postdoctoral Fellow)

Functional Characterization of MY07A in Retinal Tissue
National Eye Institute
Duration: 7/1/16–6/30/19 \$57,066

Sheyla Gonzalez Garrido, PhD (Vision-Science Fellow)

Comparative Study on Different Xenobiotic-Free Culture Media
for Human Limbal Epithelial Stem Cells
Eye Bank Association of America
Duration: 7/1/16–6/30/17 \$4,719

Roni Hazim (Vision-Science Predoctoral Fellow)

CFH in RPE Cell Biology and Disease
National Eye Institute
Duration: 3/1/17–8/31/18 \$38,487

Clinical Trials

Jean-Pierre Hubschman, MD

A Ph 2 Multicenter Randomized Clinical Trial of Ciliary Neurotrophic Factor (CNTF)
for Macular Telangiectasia Type 2 (Mac Tel)
Lowy Medical Research Institute
Duration: 8/6/14–6/30/18 \$28,886

Peter A. Quiros, MD

A Phase 2/3, Randomized, Double-Masked, Sham-Controlled Trial of QPI-1007
Delivered by Single or Multi-Dose Intravitreal Injection(s) to Subjects with
Acute Nonarteritic Anterior Ischemic Optic Neuropathy (NAION)
Quark Pharmaceuticals, Inc.
Duration: 8/4/16–8/4/19 \$119,627

SriniVas R. Sadda, MD

Safety and Efficacy of Abicipar Pegol (AGN-150998) in Patients
with Neovascular Age-Related Macular Degeneration
CEDAR Study
Allergan Pharmaceutical Corp.
Duration: 3/8/16–5/31/20 \$438,545

Alfredo A. Sadun, MD, PhD

A Prospective, Randomized, Double-Masked, Vehicle-Controlled,
Phase 2 Clinical Study to Evaluate the Safety, Tolerability and
Efficacy of MTP-131 TOPI
Stealth Biotherapeutics Inc.
Distribution: 2/12/16–2/12/18 \$13,876

David Sarraf, MD

DRCR Funding Addendum
JAEB Center for Health Research
Duration: 6/13/17–12/31/18 \$6,494

The IAI-OCTA Study, or: Microvascular Structure and Morphology
of Neovascular Membranes in Age Related Macular Degeneration (AMD)
After Intravitreal Aflibercept Injection (IAI) Therapy Using
OCT-Angiography Analysis
Regeneron Pharmaceuticals, Inc.
Duration: 3/28/17–3/28/20 \$211,609

A Randomized, Double-Masked, Active Controlled, Phase 2 Study of the
Efficacy, Safety, and Tolerability of Repeated Doses of Intravitreal
REGN910-3 in Patients with Neovascular Age-Related Macular Degeneration
Regeneron Pharmaceuticals, Inc.
Duration: 9/8/16–9/8/19 \$238,370

A Multicenter, Open-Label Extension Study to Evaluate the Long-Term Safety and Tolerability of Lampalizumab in Patients with Geographic Atrophy Secondary to Age-Related Macular Degeneration Who Have Completed a Roche-Sponsored Study
Genentech, Inc.
Duration: 11/16/16–11/16/19 \$154,394

Steven D. Schwartz, MD

Long Term Follow Up to a Phase I/II, Open-Label, Multi-Center Prospective Study to Determine the Safety and Tolerability of Subretinal Transplantation of Human Embryonic Stem Cell Derived Retinal Pigmented Epithelial (MA09-hRPE) Cells in Patients with Stargardt's Macular Dystrophy (SMD)
Astellas Institute for Regenerative Medicine
(formerly Advanced Cell Technology and Ocata Therapeutics)
Duration: 3/23/11–1/10/18 \$56,444

Long Term Follow Up to a Phase I/II, Open-Label, Multicenter, Prospective Study to Determine the Safety and Tolerability of Subretinal Transplantation of Human Embryonic Stem Cell Derived Retinal Pigment Epithelial Cells in Patients with Advanced Dry AMD
Astellas Institute for Regenerative Medicine
(formerly Advanced Cell Technology and Ocata Therapeutics)
Duration: 4/5/11–6/27/18 \$71,120

A Multicenter, Prospective Epidemiologic Study of the Progression of Geographic Atrophy Secondary to Age-Related Macular Degeneration: Protocol Number GX29633
Genentech, Inc.
Duration: 10/18/16–8/1/20 \$225,496

A Multicenter, Open-Label Extension Study to Evaluate the Long-Term Safety and Tolerability of Lampalizumab in Patients with Geographic Atrophy Secondary to Age-Related Macular Degeneration Who Have Completed a Roche-Sponsored Study
Genentech, Inc.
Duration: 10/27/16–10/27/19 \$515,861

A Multiple-Center, Multiple-Dose, Randomized, Active, Comparator-Controlled, Double-Masked, Parallel Group, 28-Week Study to Investigate the Safety, Tolerability, Pharmacokinetics, and Efficacy of RO6867461 Administered Intravitreally in Patients with Diabetic Macular Edema
Hoffmann-La Roche (Include Roche Molecular Systems, Inc.)
Duration: 10/18/16–10/18/19 \$162,437

Irena Tsui, MD

RAINBOW Study: A Randomized Controlled Study Evaluating the Efficacy and Safety of RAnibizumab Compared with Laser Therapy for the Treatment of INfants BOrn Prematurely with Retinopathy of Prematurity
Novartis Pharmaceuticals
Duration: 4/3/17–7/31/18 \$38,953

Research Contracts and Grants
Active Funding
Administered by Doheny Eye Center UCLA

Vision Science Grants

Alex A. Huang, MD, PhD

Structure and Function of Aqueous Humor Outflow
 American Glaucoma Society and Allergan
 Young Clinician Scientist Award
 Duration: 3/17/15–7/31/17 \$20,000/initial year

Glaukos Research (Outflowing Imaging)
 Glaukos Corporation
 Duration: 10/17/15–6/30/17 \$10,000/two years

Validation of a Cephalad Fluid Shift Countermeasure
 National Space Biomedical Research Institute
 Sub-award from Baylor College of Medicine
 Duration: 6/1/15–5/31/17 \$11,146

Autonomous Diagnostic Imaging Performed
 by Untrained Operators Using Augmented Reality
 as a Form of “Just-in-time” Training
 Sub-contract from KBR Wyle
 Duration: 5/26/17–5/31/17 \$11,973

SriniVas R. Sadda, MD

Multimodal Image Analysis in Age-Related Macular Degeneration
 Macula Vision Research Foundation
 Duration: 1/1/15–12/31/17 \$100,000/year

Advanced Image Analysis Tools for Diabetic Retinopathy
 Telemedicine Applications
 Eyenuk, Inc.
 Sub-award on NEI EY026864
 Duration: 8/1/16–7/31/18 \$47,771

Automated Image-Based Biomaker Computation Tools
 for Diabetic Retinopathy
 Eyenuk, Inc.
 Sub-award on NCATS Grant TR000377
 Duration: 9/26/14–6/30/17 \$101,147

Advanced Retinal Image Analysis for AMD Screening
 Eyenuk, Inc.
 Sub-award on NEI Grant EY025984
 Duration: 8/1/15–7/31/16 \$28,662

High Resolution Retinal Imaging by Fourier Ptychography
 CalTech
 Sub-award on NEI Grant EY026228
 Duration: 4/1/16–3/31/18 \$25,000

Alfredo A. Sadun, MD, PhD

Psychological and Environmental Effectors of mtDNA
 Disease Penetrance
 Children’s Hospital of Philadelphia
 Duration: 10/1/16–9/30/17 \$20,000

Deming Sun, MD

Role of IL-17+ Autoreactive T Cells in Experimental
 Autoimmune Uveitis (EAU)
 National Eye Institute
 Duration: 9/1/09–7/31/19 \$274,912

James C. Tan, MD, PhD

Karl Kirchgessner Foundation Vision Research Grant
 The Karl Kirchgessner Foundation
 Duration: 10/17/09–Open

\$50,000

Clinical Trials**SriniVas R. Sadda, MD**

Genetic Epidemiology of Age-Related Macular Degeneration
 in the Older Order Amish
 University of Pennsylvania
 Sub-award on NEI Grant EY023164
 Duration: 2/1/13–1/31/18

\$60,784

**Research Contracts and Grants
 Totals Reported in Previous Years**
Vision Science Grants**Anthony J. Aldave, MD**

Effect of Corneal Preservation Time on Long-Term Graft Success (CPTS)
 JAEB Center for Health Research
 Duration: 3/6/12–8/31/17

Genetic Factors in Keratoconus
 National Eye Institute
 Sub-award from Cedars-Sinai Medical Center
 Duration: 12/1/14–2/28/18

Dean Bok, PhD

Analysis of ARMS2 and HTRA 1 Gene Expression in
 Retinal Pigment Epithelium
 Helen Keller Foundation for Research and Education Inc.
 Duration: 6/1/16–5/31/18

Anne L. Coleman, MD, PhD

UCLA Mobile Clinic Project and UCLA Mobile Eye Clinic
 Andrea Bocelli Foundation
 Duration: 2/6/14–12/31/16

Lynn K. Gordon, MD, PhD

Pd-Ligand, a Paradoxical Role in Experimental Uveitis
 Pathogenesis and Therapy
 National Eye Institute
 Duration: 4/1/15–3/31/18

Michael B. Gorin, MD, PhD

Genetics-Based Testing of Functional and Structural Endophenotypes
 for Pre- and Early-Age-Related Macular Degeneration (AMD)
 Arnold and Mabel Beckman Foundation
 Duration: 7/1/14–6/30/18

Gary N. Holland, MD

Multicenter Uveitis Steroid Treatment (MUST) Trial
 National Eye Institute
 Sub-award from Johns Hopkins University
 Duration: 6/1/12–5/2/17

Research Contracts and Grants

Jean-Pierre Hubschman, MD

Intraocular Robotic Interventional Surgical System for Cataract Surgery Project
National Eye Institute
Duration: 9/30/14–6/29/17

Steven Nusinowitz, PhD

Michael B. Gorin, MD, PhD (Co-Principal Investigator)

Scotopic Critical Flicker Fusion in Preclinical AMD
BrightFocus Foundation
Duration: 7/1/15–6/30/18

Stacy L. Pineles, MD

Binocular Summation in Strabismus
NIH/National Eye Institute
Duration: 9/1/11–2/28/17

RPB Walt and Lily Disney Award for Amblyopia Research
Research to Prevent Blindness, Inc.
Duration: 7/1/14–6/30/19

Roxana Radu, MD

Gene Therapy to Prevent Visual Loss in Macular Degenerations
by Increasing Expression of Complement Negative-Regulatory Proteins
in the RPE
Macula Vision Research Foundation
Duration: 10/1/13–3/31/17

Daniel B. Rootman, MD, MS

Hyaluronic Acid Gels for Upper Lid Retraction in Thyroid Eye Disease
Galderma Laboratories L.P.
Duration: 6/8/16–10/8/17

Alapakkam P. Sampath, PhD

Functional Characteristics of Rod Pathways in the Retina
National Eye Institute
Duration: 2/1/14–7/31/17

Experimental and Clinical Investigations of Retinal Stimulation
National Eye Institute
Sub-award from the University of Southern California
Duration: 10/1/13–12/31/16

Federico G. Velez, MD

An Observational, Multicenter Study of the Prevalence
of Cerebrotendinous Xanthomatosis (CTX) in Patient Population
Diagnosed with Early Onset Idiopathic Bilateral Cataract
Retrophin, Inc.
Duration: 1/6/16–1/5/18

Jie Zheng, PhD

Structural Investigation of Focal Adhesion Formation and Disassembly
National Institute of General Medical Sciences
Duration: 4/1/15–3/31/17

Professional Research Series

David Stark, MD (EyeSTAR Resident)

Endocannabinoids in Retinal Ganglion Cell Regeneration
Foundation for Glaucoma Research
Duration: 3/1/16–2/28/17

Clinical Trials

Joseph Caprioli, MD

The Efficacy and Safety of Bimatoprost Sr in Patients with Open-Angle Glaucoma or Ocular Hypertension
Allergan Pharmaceutical Corp.
Duration: 4/22/15–1/31/19

A Randomized Study Comparing the Safety and Efficacy of the Innfocus Microshunt® Glaucoma Drainage System to Standard Trabeculectomy in Subjects with Primary Open Angle Glaucoma
Protocol INN-005

Innfocus Inc.
Duration: 2/4/16–2/4/18

Sophie X. Deng, MD, PhD

An 8-week Phase II, Multicenter, Randomized, Double-Masked, Vehicle Controlled Parallel Group Study with a 24 or 32 Week Follow-Up Period to Evaluate the Efficacy of a Formulation Containing Antioxidant of Recombinant Human Nerve Growth Factor
Dompe Pharmaceutical
Duration: 3/17/15–3/16/17

Brian A. Francis, MD, MS

Study for Benchmarking the Management of Ophthalmic Diseases Using the Diopsys Visual Evoked Potential/Pattern ERG/ERG Protocol
Diopsys Inc.
Duration: 2/21/16–1/31/18

Robert Alan Goldberg, MD

A Multicenter Double-Masked Placebo-Controlled Efficacy and Safety Study of RV001, an Insulin-Like Growth Factor-1 Receptor Antagonist Antibody (Fully Human), Administered Every 3 Weeks by Intravenous Infusion in Patients Suffering from Active Thyroid Eye Disease
Premier Research International, LLC
Duration: 4/16/13–8/31/17

Michael B. Gorin, MD, PhD

A Phase 2 Multicenter, Double-Masked, Randomized, Placebo-Controlled Study to Investigate the Long Term Safety, Tolerability, Pharmacokinetics and Effects of ALK-001 on the Progression of Stargardt Disease
Protocol ALK-001
Alkeus Pharmaceuticals Inc.
Duration: 5/23/16–5/23/18

Gary N. Holland, MD

ARO Agreement for a Phase I/II, Open-Label, Multicenter, Prospective Study to Determine the Safety and Tolerability of Subretinal Transplantation of Human Embryonic Stem Cell Derived Retinal Pigmented Epithelial Cells in Patients with SMD
Astellas Institute for Regenerative Medicine
(formerly Advanced Cell Technology and Ocata Therapeutics)
Duration: 4/25/11–11/22/16

ARO Agreement for a Phase I/II, Open-Label, Multicenter, Prospective Study to Determine the Safety and Tolerability of Sub-Retinal Transplantation of Human Embryonic Stem Cell Derived Retinal Pigmented Epithelial (Ma90-hRPE) Cells in Patients with Advanced Dry AMD
Astellas Institute for Regenerative Medicine
(formerly Advanced Cell Technology and Ocata Therapeutics)
Duration: 5/31/11–11/22/16

Jean-Pierre Hubschman, MD

A Phase 3, Randomized, Double-Masked, Controlled Trial to Establish the Safety and Efficacy of Intravitreal Administration of Fovista (Anti-PDGF-B Pegylated Aptamer)...ARMD
Ophthotech Corporation
Duration: 12/4/13–9/27/17

Ocriplasmin Research to Better Inform Treatment (ORBIT-Protocol# TG-MV-018)
Thrombogenics, Inc. (Belgium)
Duration: 7/16/14–7/15/16

Jean-Pierre Hubschman, MD

Steven D. Schwartz, MD (Previous Principal Investigator)

A Natural History of Macular (Parafoveal) Telangiectasia
Lowy Medical Research Institute
Duration: 9/1/05–12/31/18

Colin A. McCannel, MD

A Phase II, Multicenter, Randomized, Active Treatment-Controlled Study of the Efficacy and Safety of the Ranibizumab Port Delivery System for Sustained Delivery of Ranibizumab in Patients with Subfoveal Neovascular Age-Related Macular Degeneration (GX28228)
Genentech, Inc.
Duration: 9/22/15–6/27/18

Kevin M. Miller, MD

Safety and Effectiveness of the Customflex Artificial Iris Prosthesis for the Treatment of Iris Defects
Clinical Research Consultants, Inc.
Duration: 6/12/14–2/21/18

A Prospective Randomized Controlled Multicenter Clinical Study to Evaluate the Safety and Effectiveness of the Light Adjustable Lens in Subjects with Pre-Existing Corneal Astigmatism
Calhoun Vision, Inc.
Duration: 7/26/12–7/28/16

Post Approval Study of the Acrysof IQ Toric High Cylinder Power Intraocular Lens
Alcon Laboratories, Inc.
Duration: 4/17/12–11/18/16

Alfredo A. Sadun, MD, PhD

Emergency Administration of EPI-743 to a Single Patient with Leber's Hereditary Optic Neuropathy (LHON)
Edison Pharmaceuticals, Inc.
Duration: 10/17/14–8/23/17

A Randomized, Double-Masked, Sham-Controlled, Pivotal Clinical Trial to Evaluate the Efficacy of a Single, Intravitreal Injection of GS010 (RAAV2/2-ND4) A
Gensight Biologics
Duration: 1/11/16–1/11/18

A Randomized, Double-Masked, Sham-Controlled, Pivotal Clinical Trial to Evaluate the Efficacy of a Single, Intravitreal Injection of GS010 (RAAV2/2-ND4) B
Gensight Biologics
Duration: 1/12/16–1/12/18

David Sarraf, MD

Intravitreal Aflibercept Injection for the Treatment of Submacular Vascularized Pigment Epithelial Detachment (EVEN Study)
Southern California Desert Retina Consultants
Duration: 2/7/13–7/21/16

A Phase III, Multicenter, Randomized Double-Masked Sham-Controlled Study to Assess the Efficacy and Safety of Lampalizumab Administered Intravitreally to Patients with Geographic Atrophy Secondary to ARMD
Genentech, Inc.
Duration: 11/21/14–9/27/18

Safety and Efficacy of Abicipar Pegol (AGN-150998) in Patients with Neurovascular Age-Related Macular Degeneration
Sequoia Study
Allergan Pharmaceutical
Duration: 4/14/16–5/31/20

Steven D. Schwartz, MD

A Phase I/II, Open-Label, Prospective Study to Determine the Safety and Tolerability of Subretinal Transplantation of Pigmented Epithelial Cells in Patients with Geographic Atrophy Secondary to Myopic Macular Degeneration
Ocata Therapeutics (formerly Advanced Cell Technology)
Duration: 4/10/14–9/1/16

A Phase 1 Multicenter Open Label Safety and Tolerability Clinical Trial of Ciliary Neurotrophic Factor (CNTF) in Patients with Macular Telangiectasis Type 2
Neurotech Pharmaceuticals, Inc.
Duration: 7/19/11–7/18/17

A Phase III, Multicenter, Randomized Double-Masked, Sham-Controlled Study to Assess the Efficacy and Safety of Lampalizumab Administered Intravitreally to Patients with Geographic Atrophy Secondary to ARMD
Genentech, Inc./Hoffman-La Roche Inc.
Duration: 11/18/14–9/27/18

A Phase 2, Double-Masked, Randomized, Parallel Group, Sham Surgery Placebo Controlled Multicenter Study to Evaluate Systemic Immunosuppression Regimens as Graft Rejection Prophylaxis Following Subretinal Transplantation of Human Embryonic Stem Cell Derived Retinal Pigmented Epithelial Cells in Patients with Geographic Atrophy Secondary to ARMD (#MA09-hRPE AMD 02)
Astellas Institute for Regenerative Medicine (formerly Advanced Cell Technology and Ocata Therapeutics)
Duration: 10/7/15–10/7/17

Federico G. Velez, MD

A Randomized, Double-Masked, Parallel-Group, Phenylephrine Controlled Study of the Effect of OMS302 Added to Standard Irrigation Solution on Intraoperative Pupil Diameter and Acute Postoperative Pain in Children Ages Birth Through Three Years Undergoing Unilateral Cataract Extraction with or Without Lens Replacement
Omeros Inc.
Duration: 8/6/15–8/6/17

A Randomized, Multicenter, Double Masked, Parallel-Group Study Assessing the Safety and Efficacy of Loteprednol Etabonate Ophthalmic Gel, 0.5% Versus Prednisolone Acetate Ophthalmic Suspension, 1% for the Treatment of Intraocular Inflammation Following Surgery for Childhood Cataract
Bausch and Lomb
Duration: 9/17/15–9/17/17

Clinical Research Studies

In the 2016–2017 academic year, UCLA Department of Ophthalmology faculty conducted innovative research in the preservation and restoration of vision, including 80 clinical research studies to better understand the eye and its ocular disorders, as well as to evaluate new and potentially sight-saving treatments.

Cornea and External Eye

A Clinical Trial to Evaluate the Efficacy of an Investigational Drug for the Treatment of State 2 and 3 Neurotrophic Keratitis

The purpose of this study is to find out the effectiveness of a formulation containing anti-oxidant of recombinant human nerve growth factor (rhNGF) eye drops solution in healing the corneal epithelium or corneal ulcers in patients with neurotrophic keratitis. Investigators: Anthony J. Aldave, MD, and Sophie X. Deng, MD, PhD

Analysis of the Corneal and Limbal Epithelial Changes in Limbal Stem Cell Deficiency Using In Vivo Confocal Microscopy

Investigators are working to establish a system for diagnosing limbal stem cell deficiency at a cellular level by correlating the information from impression cytology tests, confocal microscopy pictures, and medical records. Investigators: Anthony J. Aldave, MD, and Sophie X. Deng, MD, PhD

Effect of Corneal Preservation Time on Long-Term Graft Success

The purpose of this study is to evaluate the effect of preservation time on corneal transplants. It will compare the preservation time up to the FDA limit of 14 days and hopes to determine that longer preservation time does not adversely impact graft success and endothelial cell density. Investigators: Anthony J. Aldave, MD, and Sophie X. Deng, MD, PhD

Genetic Basis of Posterior Polymorphous Corneal Dystrophy

Funded by the National Eye Institute, this study seeks to identify the gene(s) responsible for posterior polymorphous dystrophy, an inherited corneal endothelial disorder that may result in irreversible corneal swelling and loss of vision. Investigators: Anthony J. Aldave, MD, and Gary N. Holland, MD

Identifying Novel Genes for Fuchs Corneal Endothelial Dystrophy

In this multicenter study, investigators are working to identify the gene(s) responsible for Fuchs corneal endothelial dystrophy, an inherited disorder that may result in irreversible corneal swelling and loss of vision. Investigators: Anthony J. Aldave, MD, Gary N. Holland, MD, and Bartly J. Mondino, MD

Keratoprosthesis Implantation in Patients with Corneal Opacification

This study aims to determine the success rate of keratoprosthesis (artificial cornea) transplantation for visual rehabilitation in patients with corneal opacification. Investigators: Anthony J. Aldave, MD, and Gary N. Holland, MD

Clinical Trial to Evaluate Corneal Cross-Linking Keratoprosthesis Carrier Tissue

This phase I/II prospective, randomized, multicenter, double-masked, vehicle-controlled clinical trial evaluates the safety and efficacy of corneal collagen cross-linking the keratoprosthesis carrier tissue in subjects who are candidates for high-risk keratoprosthesis implantation because of a history of corneal melts, sterile corneal ulcers, or autoimmune diseases (eg, Stevens-Johnson syndrome, ocular cicatricial pemphigoid). Investigators: Anthony J. Aldave, MD, and Sophie X. Deng, MD PhD

Ocular Surface Microbiome Study

This study aims to investigate and understand the normal ecosystem of microbes that live on the eye's surface and how their ecological system changes and responds to routine eye care and treatments. Investigators hope to find associations between different disease states of the eye and the ecosystem of microbes, which might lead to new and better understanding of various disease states and related treatments. Investigators: Hugo Hsu, MD, Vikas Chopra, MD, and Gad Heilweil, MD

Eye Infections and Inflammations

Corneal Endothelial Cell Changes in Children with Uveitis

This is a prospective study to evaluate the cornea, specifically endothelial cells, in children with uveitis. Uveitis is a general term that means inflammation inside the eye. Inflammation can damage any part of the eye, such as the corneal endothelium, which is an important tissue layer at the back of the cornea (clear part in front of the eye) responsible for the maintenance of corneal clarity. Uveitis may lead to a change in the number of endothelial cells and their shape. Specular microscopy, which is a noninvasive corneal-imaging technique, helps to estimate changes in corneal endothelium long before clinical signs of corneal damage. Investigators: Joseph Caprioli, MD, JoAnn A. Giacconi, MD, Gary N. Holland, MD, Simon K. Law, MD, PharmD, and Ralph D. Levinson, MD

Factors Related to the Severity of Ocular Toxoplasmosis

Toxoplasmosis is a common parasitic disease that can cause a vision-threatening infection of the retina. Individuals with and without ocular toxoplasmosis are being evaluated with a blood test to determine whether (1) people can have a genetic predisposition to severe disease when infected with the parasite, or (2) there is a particular strain of parasite that causes more severe disease than others. Investigators: Gary N. Holland, MD, and Ralph D. Levinson, MD

Multicenter Uveitis Steroid Treatment (MUST)

Investigators are comparing two currently available treatments for uveitis. Systemic treatment utilizing medications taken orally, by injection, or by intravenous infusion is being compared to treatment with an intraocular implant containing corticosteroid. Investigators: Gary N. Holland, MD, Jean-Pierre Hubschman, MD, and Ralph D. Levinson, MD

Studies Evaluating a New Drug in the Treatment of Patients with Uveitis

Uveitis is caused by inflammation of the middle layer of the eye. The purpose of this study is to find out more about how the drug works, and if it is effective for treating uveitis by limiting one of the proteins that causes inflammation. Investigators: Gary N. Holland, MD, Olivia Lee, MD, and Ralph D. Levinson, MD

Corticosteroids for Uveitic Macular Edema

The purpose of this research study is to compare three treatments for macular edema in patients who have the eye condition known as uveitis (inflammation inside the eye). Macular edema is swelling of the retina at the back of the eye, and it can cause vision loss. The standard treatment is to inject corticosteroid drugs next to the eye or directly into the eye. Investigators: Gary N. Holland, MD, and Colin A. McCannel, MD

Zoster Eye Disease Study (ZEDS)

The purpose of this study is to find out whether one year of a low dose of the medicine valacyclovir reduces complications of shingles affecting the eye. Shingles is caused by the chicken pox virus, and the study will involve two groups of participants who have eye problems due to shingles. One group will receive daily valacyclovir medication and the other group will receive a placebo (a pill designed to look like valacyclovir but that contains no active drug). Investigators: Gary N. Holland, MD, Anthony J. Aldave, MD, Sophie X. Deng, MD, PhD, and John A. Irvine, MD

Macular Edema Ranibizumab v. Intravitreal Anti-inflammatory Therapy (MERIT) Trial

The MERIT Trial was designed to find out which intravitreal therapy offers the best balance of effectiveness and tolerability in treating persistent uveitic macular edema in eyes with controlled uveitis but persistent macular edema, specifically by comparing the relative efficacy and safety of intravitreal ranibizumab (Lucentis®) and intravitreal methotrexate to intravitreal dexamethasone implant (Ozurdex®) for the treatment of persistent uveitic macular edema. Investigators: Gary N. Holland, MD, Colin A. McCannel, MD, and Pradeep S. Prasad, MD

Glaucoma

A Clinical Trial to Evaluate the Efficacy and Safety of an Investigational Eye Drop in Patients with Open-Angle Glaucoma or Ocular Hypertension

The study objective is to evaluate the intraocular pressure-lowering efficacy and safety of two dose strengths of an investigational eye drop in patients with open-angle glaucoma or ocular hypertension after initial and repeated administrations. Investigators: Joseph Caprioli, MD, Anne L. Coleman, MD, PhD, JoAnn A. Giaconi, MD, Simon K. Law, MD, PharmD, and Kouros Nouri-Mahdavi, MD

Clinical Measurements of the Optic Nerve in Glaucoma

The goal of this study is to develop novel structural measures of the optic nerve and nerve fiber layer, which are sensitive and specific for early and progressive glaucomatous optic nerve damage. Investigators: Joseph Caprioli, MD, Anne L. Coleman, MD, PhD, and Simon K. Law, MD, PharmD

Effect of Yoga on Glaucoma

The purpose of this study is to examine the practice of yoga and its ability to improve a patient's vision by relieving stress and reducing eye pressure. Investigator: Anne L. Coleman, MD, PhD

Eye Health Imaging Study

The purpose of this study is to expand the normative database for the Heidelberg Spectralis OCT by collecting ophthalmic data from healthy eyes of people of Hispanic/Latino, Asian, and African American descent. Investigators: Joseph Caprioli, MD, and Kouros Nouri-Mahdavi, MD

Glaucoma Imaging Study

This study is evaluating different imaging techniques and their use in improving open-angle glaucoma detection. Investigators: Joseph Caprioli, MD, and Kouros Nouri-Mahdavi, MD

Ocular Biometric Measurements in Angle-Closure Glaucoma

The purpose of this study is to determine the potential contributing factors in angle-closure patients of different ethnicities and to determine predictive factors for this type of glaucoma. Investigators: Joseph Caprioli, MD, Anne L. Coleman, MD, PhD, Simon K. Law, MD, PharmD, and Kouros Nouri-Mahdavi, MD

Ocular Hypertension Treatment Study

Since topical hypotensive medications are safe and effective in delaying or preventing primary open angle glaucoma, this study is examining whether other forms of treatment can be deferred with little or no penalty. Investigator: Anne L. Coleman, MD, PhD

Optic Nerve Appearance in Age-Related Macular Degeneration

In order to evaluate the relationship between macular degeneration and optic nerve change, digital imaging technology and photography are being used to assess the structural appearance of the optic nerve in patients with age-related macular degeneration. Investigator: Simon K. Law, MD, PharmD

Role of Pattern Electroretinogram (PERG) in Glaucoma

This study is researching an electrophysiological test called pattern electroretinogram (PERG). The goal is to determine the role of PERG in estimating the risk of future glaucoma progression and the reversibility of glaucomatous damage after treatment. The latter could help clinicians better determine to what extent eye pressure needs to be lowered to prevent disease progression. Investigators: Joseph Caprioli, MD, Anne L. Coleman, MD, PhD, JoAnn A. Giaconi, MD, Simon K. Law, MD, PharmD, and Kouros Nouri-Mahdavi, MD

Vision-Related Quality of Life and Ocular Dominance

This study is designed to evaluate how quality of life is impacted by glaucoma in relation to eye dominance. It aims to determine whether quality of life is affected more by glaucoma if it primarily affects the dominant eye. Investigators: Joseph Caprioli, MD, Anne L. Coleman, MD, PhD, JoAnn A. Giaconi, MD, and Simon K. Law, MD, PharmD

Clinical Trial to Evaluate a Microshunt for the Treatment of Glaucoma

The objective of this study is to assess the safety and efficacy of a microshunt when used to lower intraocular pressure (IOP) in subjects with primary open angle glaucoma whose IOP is not controlled when using maximum-tolerated glaucoma medications. Investigators: Joseph Caprioli, MD, Anne L. Coleman, MD, PhD, JoAnn A. Giaconi, MD, Simon K. Law, MD, PharmD, and Brian A. Francis, MD, MS

Analysis of Visual Function in Glaucoma

The purpose of this study is to establish electrophysiological benchmarks using the Visual Evoked Potential/Pattern Electroretinogram (VEP/PERG) protocols of populations with glaucoma before treatment and after treatment. Investigators: Brian A. Francis, MD, MS, Alex A. Huang, MD, PhD, Vikas Chopra, MD, Srinivas R. Sadda, MD, and Gad Heilweil, MD

Ocular Imaging in Simulated Microgravity

Special consideration needs to be given to how microgravity may influence the biology and well-being of astronauts. It has been well documented that astronauts returning from space experience visual disturbance in addition to pathological changes that affect the eye. This study will noninvasively estimate intracranial pressure in study participants and obtain intraocular/vascular imaging in simulated microgravity environments. Investigator: Alex A. Huang, MD, PhD

Lens and Cataract

Safety and Effectiveness of the CustomFlex Artificial Iris Prosthesis for the Treatment of Iris Defects

This study is being conducted to evaluate the safety and effectiveness of an artificial iris prosthesis for the treatment of full or partial aniridia resulting from congenital aniridia, acquired iris defects (including traumatic iris defects and mydriasis), or conditions associated with full or partial aniridia, such as ocular or oculocutaneous albinism and iridocorneal endothelial (ICE) syndrome, and iris coloboma. Investigators: Anthony J. Aldave, MD, and Kevin M. Miller, MD

Macula, Retina, and Vitreous

A Phase 2 Clinical Trial to Assess the Efficacy and Safety of an Investigational Drug for Patients with Geographic Atrophy Secondary to Age-Related Macular Degeneration

Investigators are currently evaluating intravitreal injection for patients with geographic atrophy secondary to age-related macular degeneration. Investigators: Michael B. Gorin, MD, PhD, Jean-Pierre Hubschman, MD, Colin A. McCannel, MD, David Sarraf, MD, and Steven D. Schwartz, MD

A Safety and Tolerability Trial of CNTF in Patients with MacTel Type 2

This study is assessing the safety of the NT-501 implant in patients with macular telangiectasia type 2. The device, an implant, is a small capsule of cells that is placed inside the eye. This allows a controlled, sustained release of CNTF directly to the retina. Investigators: Jean-Pierre Hubschman, MD, Allan E. Kreiger, MD, and Steven D. Schwartz, MD

A Study to Assess the Efficacy and Safety of Lampalizumab Administered Intravitreally to Patients with Geographic Atrophy Secondary to Age-Related Macular Degeneration

This study is a Phase III, double-masked, multicenter, randomized, sham injection-controlled study evaluating the efficacy and safety of lampalizumab administered every four weeks or every six weeks by intravitreal injections for approximately a two-year (96-week) treatment period in patients with geographic atrophy of the retina resulting from age-related macular degeneration. Investigators: David Sarraf, MD, and Steven D. Schwartz, MD

Clinical Characterization, Genetic Testing, and Visual Function in Patients with Stargardt Disease

Investigators are doing a comprehensive analysis of visual function in patients diagnosed with Stargardt disease, an early onset form of macular degeneration caused by a number of mutations in the *ABCR* gene. They are performing molecular genetic testing to confirm the Stargardt diagnosis and better understand the diversity of the condition. Investigators: Debora B. Farber, PhD, DPhhc, Michael B. Gorin, MD, PhD, and Steven Nusinowitz, PhD

Incidence of Late Macular Degeneration in Older Women

The goal of this research is to determine the incidence of late age-related macular degeneration (AMD), the rate of progression of AMD, and the association of specific risk factors such as diabetes mellitus and prior cataract surgery with late AMD and its progression in older women. Investigator: Anne L. Coleman, MD, PhD

Modified Retinal Fundus Camera

This study evaluates a modified retinal fundus camera to see if significant differences can be found in patients with choroidal melanoma, age-related macular degeneration, or diabetic retinopathy. Investigator: Irena Tsui, MD

Natural History Study of Macular Telangiectasia

Investigators are collecting data about macular telangiectasia with the goal of acquiring more knowledge of and developing a treatment for this rare retinal disease. Investigators: Michael B. Gorin, MD, PhD, Jean-Pierre Hubschman, MD, Allan E. Kreiger, MD, Tara A. McCannel, MD, PhD, David Sarraf, MD, and Steven D. Schwartz, MD

Natural History of the Progression of Choroideremia

This is a one-year natural history, observational study to characterize the visual function and retinal structural changes associated with X-linked choroideremia with the intention of determining the best means of measuring disease progression and the rate of natural progression for this condition. Investigators: Michael B. Gorin, MD, PhD, and Steven Nusinowitz, PhD

Research with Retinal Cells Derived from Stem Cells for Dry Age-Related Macular Degeneration (AMD)

This study is evaluating the safety and efficacy of the implantation of MA09-hRPE cells, assessing the number of cells to be transplanted in future studies, and evaluating measures for determining the effectiveness of future stem cell therapy for AMD. Investigators: Jean-Pierre Hubschman, MD, Allan E. Kreiger, MD, and Steven D. Schwartz, MD

Research with Retinal Cells Derived from Stem Cells for Stargardt Macular Dystrophy

This study is evaluating the safety and efficacy of the implantation of MA09-hRPE cells, assessing the number of cells to be transplanted in future studies, and evaluating measures for determining the effectiveness of future stem cell therapy for Stargardt macular dystrophy. Investigators: Jean-Pierre Hubschman, MD, Allan E. Kreiger, MD, and Steven D. Schwartz, MD

Study of Macular Disease Using Spectral Domain Optical Coherence Tomography Angiography (SD-OCTA)

The RTVue XR 100 Avanti with SSADA will be used to screen patients with macular disease (eg, vitreomacular disorders, diabetic retinopathy, retinal vascular disease, retinal toxicity, age-related macular degeneration, or any other retinal or macular disorder) as detected with clinical examination or ancillary testing, such as with standard OCT or with color fundus photography or fluorescein angiography (FA) or fundus autofluorescence. Investigators: Michael B. Gorin, MD, PhD, Colin A. McCannel, MD, David Sarraf, MD, and Steven D. Schwartz, MD

Understanding the Genetics of Inherited Eye Disorders

The Institute is participating in a study to search for the gene(s) responsible for inherited disorders that are either specific to the eye or are part of the medical condition. This study provides for the clinical characterization of affected individuals and at-risk family members, in conjunction with molecular genetic testing, to identify the causative genes and mutations. Investigators: Anthony J. Aldave, MD, and Michael B. Gorin, MD, PhD

Analysis for Visual Function in Age-Related Macular Degeneration

Establish electrophysiological benchmarks, using the Visual Evoked Potential/Pattern Electroretinogram (VEP/PERG) protocols of populations with glaucoma before treatment and after treatment. Investigators: Srinivas R. Sadda, MD, Gad Heilweil, MD, Brian A. Francis, MD, MS, Alex A. Huang, MD, PhD, and Vikas Chopra, MD

Evaluating the Use of an Implant for Patients with Macular Degeneration

This clinical trial is to determine the efficacy, safety, and pharmacokinetics of ranibizumab delivered through the implant using three ranibizumab-formulation arms compared with the control arm in patients with subfoveal neovascular (wet) age-related macular degeneration (AMD). The study will also evaluate the safety of the ranibizumab port delivery system (RPDS) combination product. Screening and randomization visits will be followed by a treatment period. Investigators: Colin A. McCannel, MD, Tara A. McCannel, MD, PhD, Pradeep S. Prasad, MD, Michael B. Gorin, MD, PhD, and David Sarraf, MD

Evaluation of a New Drug for Stargardt Disease

The purpose of this research study is to find out whether a new drug for Stargardt disease is safe and effective. There are currently no proven treatments for Stargardt disease, a disease that leads to blindness in almost all cases. Investigators: Michael B. Gorin, MD, PhD, and Steven Nusinowitz, PhD

The IAI-OCTA Study

This study is utilizing a new, FDA approved, non-standard of care technology (optical coherence tomography-angiography by Optovue) to image and evaluate the treatment outcomes of using standard of care intravitreal Aflibercept injections for their approved use in patients diagnosed with neovascular age-related macular degeneration who are naive to previous Anti-VEGF therapies. Investigator: David Sarraf, MD

Repeated Doses of an Investigational Drug in Patients with Neovascular Age-Related Macular Degeneration

This phase 2, year-long study will require the recruitment of patients with wet or neovascular age-related macular degeneration who are naive to anti-VEGF treatment. Investigators: David Sarraf, MD, Michael B. Gorin, MD, PhD, and Colin A. McCannel, MD

Optical Coherence Tomography Angiography of Foveal Avascular Zone in Premature Children

The purpose of this prospective study is to evaluate blood vessel development in children and adults who are born early and compare them with children and adults who were not born early by getting optical coherence tomography (OCT), OCT-angiography, color pictures, refraction, and axial length on subjects with retinopathy of prematurity and without retinopathy of prematurity. Investigators: Irena Tsui, MD, Stacy L. Pineles, MD, and Federico G. Velez, MD

Study for Retinopathy of Prematurity

The purpose of this study is to determine if intravitreal ranibizumab is superior to laser ablation therapy in the treatment of retinopathy of prematurity (ROP). The study will assess the ability of these treatments to lead to regression of active ROP and prevent the development of ocular complications that are associated with poor visual outcome. Vascular endothelial growth factor (VEGF) plays an important role in the pathogenesis of ROP. There is a growing body of evidence supporting the use of targeted pharmacologic inhibition of VEGF in the management of ROP. Investigator: Irena Tsui, MD

Neuro-Ophthalmology

Analysis of Samples from Patients with Rhegmatogenous Retinal Detachment (RRD) to Identify Potential Biochemical Markers of Retinal Stress

Vision loss from a retinal detachment is due in part to ischemia that occurs when the retina moves away from the choroidal vessels that supply oxygen and nutrition to the outer two-thirds of the retina. Studying the biochemical mechanisms of retinal stress and death can be useful in understanding the cellular mechanisms and timeline of vision loss, leading to new ways to improve vision. The aim of the study is to identify biomarkers for rhegmatogenous retinal detachment in aqueous (the fluid in the front of the eye), vitreous (the gel filling the center of the eye), and blood. Investigators: Brian A. Francis, MD, MS, and Alfredo A. Sadun, MD, PhD

Natural History Study of Leber Hereditary Optic Neuropathy

Leber hereditary optic neuropathy (LHON) is one of the diseases where the mitochondria of the retina cells are not functioning correctly, which can lead to loss of vision. Currently there are no FDA-approved treatments for LHON. The purpose of this study is to obtain electroretinography (ERG) data and optical coherence tomography (OCT) data from patients who carry the Leber hereditary optic neuropathy gene. Investigator: Alfredo A. Sadun, MD, PhD

A Protocol to Follow-up with Patients on Emergency Administration of EPI-743 with Leber Hereditary Optic Neuropathy

EPI-743 is a new experimental drug that may improve mitochondrial function. EPI-743 is a form of vitamin E that has been changed to a new compound in the laboratory. The experimental drug EPI-743 was selected because the mitochondrial disease manifestations appeared to improve when the drug was given to cells from a patient with Leber hereditary optic neuropathy (LHON), which were grown in the laboratory. Investigator: Alfredo A. Sadun, MD, PhD

Evaluation of a Drug for the Treatment of Leber Hereditary Optic Neuropathy

The objective of this study is to evaluate the safety, tolerability, and efficacy of a topical ophthalmic solution in the treatment of subjects with Leber Hereditary Optic Neuropathy (LHON). The study drug has been shown to enhance or benefit mitochondria function in studies done on cells grown in the laboratory. Investigator: Alfredo A. Sadun, MD, PhD

Evaluating the Efficacy of a Single Intravitreal Injection for Patients with Leber Hereditary Optic Neuropathy

The goal of this clinical trial is to assess the effectiveness of a gene therapy in improving the visual outcome in patients with Leber Hereditary Optic Neuropathy (LHON) due to a mitochondrial mutation. Investigator: Alfredo A. Sadun, MD, PhD

A Trial of QPI-1007 Delivered by Single or Multi-Dose Intravitreal Injection(s) to Subjects with Acute Nonarteritic Anterior Ischemic Optic Neuropathy (NAION)

The purpose of this research study is to test whether the experimental drug QPI-1007 helps prevent loss of visual acuity (sharpness of vision). QPI-1007 is being developed to treat vision loss that can occur when there is not enough blood flow to the nerve tissue in the eye; that is, after a stroke of the optic nerve or NAION. Investigators: Peter A. Quiros, MD, Gad Heilweil, MD, Michael S. Ip, MD, Mohammad Khan, MD, Alfredo A. Sadun, MD, PhD

Ocular Melanoma

Molecular and Cytogenetic Studies of Ocular Melanoma

The goal of this research is to study ocular melanoma tumor tissue and to identify key molecular and genetic features that could help predict those patients who may be at high risk for metastasis. Investigators: Lynn K. Gordon, MD, PhD, Tara A. McCannel, MD, PhD, and Bradley R. Straatsma, MD, JD

Optical Coherence Tomography of Regional Abnormalities Associated with Choroidal Nevus, Choroidal Melanoma, and Choroidal Melanoma Treated with Iodine-125 Brachytherapy

In this study, optical coherence therapy (OCT) imaging is performed during regularly scheduled visits on patients with choroidal nevus, choroidal melanoma, and choroidal melanoma treated with iodine-125 brachytherapy. The purpose is threefold: to study the structure and function of the retina overlying the tumor and the macula, to evaluate the effects of radiation on the retina, and to compare OCT imaging to other imaging procedures. Investigators: Tara A. McCannel, MD, PhD, and Bradley R. Straatsma, MD, JD

PET/CT Imaging for Early Detection of Ocular Melanoma

This research involves the use of combined positron emission tomography (PET)/computed tomography (CT) scans in subjects with ocular melanoma. It may ultimately provide new knowledge that will be used to develop better ways of monitoring for tumor spread and allow for early treatment if metastasis is found. Investigators: Tara A. McCannel, MD, PhD, and Bradley R. Straatsma, MD, JD

Orbital and Ophthalmic Plastic Surgery

Characteristics of the Brow–Eyelid Margin Relationship

The purpose of this study is to determine if changing the effect of gravity has an effect on eyelid position. Investigators: Robert Alan Goldberg, MD, and Daniel B. Rootman, MD, MS

Hyaluronic Acid Gels for Upper Lid Retraction in Active State Thyroid Eye Disease

This study is to determine if hyaluronic acid gel (HAG) can be used reliably and reproducibly to correct upper eyelid retraction, improve dry eye related symptoms, aesthetic appearance, and quality of life in active-stage thyroid eye disease (TED). The study also aims to determine the long-term outcome of TED and how long the effects of HAG can last. Investigator: Daniel B. Rootman, MD, MS

Pro-Inflammatory Cytokines, Dry Eye, and Thyroid Eye Disease

This study's purpose is to determine whether there are specific inflammatory proteins in tears of patients with active-stage thyroid eye disease (TED). If these inflammatory proteins exist, the study aims to determine whether they can be used to predict dry eye symptomatology and if they can be used to predict TED activity. Investigators: Robert Alan Goldberg, MD, and Daniel B. Rootman, MD, MS

Studies on Tissue in Autoimmune Diseases

This study aims to determine the cause of eye problems in Graves disease and other autoimmune diseases. Examination is being done of material removed from orbits during surgical therapy for Graves disease or other problems requiring surgery on the tissue surrounding the eyes, of thyroid tissue removed during the course of surgical therapy, or of blood drawn for laboratory tests. Investigator: Robert Alan Goldberg, MD

Ptosis Surgery Outcomes Scale

Currently there are no standardized reporting criteria for research on ptosis outcomes, making the literature difficult to interpret. In order to assess the relative efficacy of surgical techniques and to understand the value of an individual intervention, standardization is vital. The purpose of this investigation is to define and validate a universal measure for ptosis outcomes that can be used in defining both value and efficacy in ptosis surgery. Investigator: Daniel B. Rootman, MD, MS

Effect of External Eyelid Weighting on Lid Position in Normal and Ptosis Patients

The purpose of this investigation is to compare the ability of normal and ptotic patients to maintain eyelid position by adapting to acute and dramatic changes in protracting forces by using eyelid weights. This project will help elucidate the physiology of the eyelid position maintenance system, and provide insight into its ability to respond to changes in disease. Investigator: Daniel B. Rootman, MD, MS

Temporal Fossa in Different Ethnicities

Previous studies have determined differences in anatomy between different ethnicities. For example, Asians have more prominent subcutaneous, sub-orbicularis, and pretarsal fat tissue in upper eyelid compared to Caucasians. Better knowledge of these differences is important for cosmetic procedures to achieve better results and fewer complications. The aim of this study is to investigate differences in anatomy of temporal fossa between different ethnicities using three-dimensional CT scan images. Investigators: Robert Alan Goldberg, MD, and Catherine J. Hwang, MD

Ocular Protrusion in Sitting and Supine Positions

There is still controversy in the literature as to the difference in the degree of ocular protrusion (proptosis) between the supine and upright positions in normal subjects and in patients with thyroid eye disease with and without extraocular muscle involvement. The aim of this study is to compare the degree of ocular protrusion in normal individuals and patients with thyroid eye disease between sitting and lying (supine) positions. Investigators: Robert Alan Goldberg, MD, and Daniel B. Rootman, MD, MS

Clinical Presentation and Management of Orbital Plasmacytoma

Orbital plasmacytoma is a rare monoclonal proliferation of plasma cells that can be associated with multiple myeloma. The purpose of this study is to contribute to the largest case series of orbital plasmacytomas to date and review its clinical characteristics. Investigator: Daniel B. Rootman, MD, MS

Neuroendocrine Tumor Metastases in the Eye and Orbit

The purpose of this study is to understand the diversity in presentation of carcinoid tumors of the orbit, as well as to identify, stage, and grade related factors that may affect prognosis and thus treatment decisions. In addition, we aim to answer the question if there are any features of carcinoid tumor presentations in the orbit that can predict outcome and thus guide therapeutic decision-making. Investigator: Daniel B. Rootman, MD, MS

Pediatrics and Strabismus

Pediatric Cataract Surgery Outcomes Registry

This study aims to collect core clinical data on children and teens undergoing surgery for cataracts in order to conduct analyses and generate hypotheses. The proposed research model is a patient registry. Clinical outcomes data will be collected from affected subjects after cataract surgery has been performed. Investigators: Stacy L. Pineles, MD, and Federico G. Velez, MD

A Prospective Observation Study of Adult Strabismus

The purpose of this study is to learn about treatments for strabismus in adults. There are several different treatment options for strabismus: sometimes these conditions are treated with special glasses that help to align the eyes (prism) or with exercises that help the eyes work together, and sometimes these conditions are treated with surgery or Botox injection to straighten the eyes. Investigators: Stacy L. Pineles, MD, and Federico G. Velez, MD

Clinical Trial to Evaluate Antibiotics Used During Surgery

This prospective, randomized trial will enroll children who are undergoing cataract surgery. The study will evaluate two antibiotics to treat inflammation after surgery—drugs that are currently FDA approved for adults. Investigators: Federico G. Velez, MD, Stacy L. Pineles, MD, and Joseph L. Demer, MD, PhD

An Observational Study in Patients Diagnosed with Idiopathic Bilateral Cataracts

The purpose of this study is to understand better how many people who have been diagnosed with early-onset idiopathic bilateral cataracts may have a rare but treatable disease called cerebrotendinous xanthomatosis (CTX). In people who have CTX, one of the first signs of the disease is often cataracts from an unknown cause at an early age. Investigators: Federico G. Velez, MD, Stacy L. Pineles, MD, and Joseph L. Demer, MD, PhD

Evaluation of a Drug During Pediatric Cataract Surgery

The purpose of this research study is to determine if adding a drug to the rinsing solution helps keep the pupil dilated (open) during cataract surgery and to see if the drug reduces eye pain after surgery. The study doctor is also doing this study to find out if receiving this drug is better in children than receiving the standard-of-care treatment, Phenylephrine HCl alone. Investigators: Federico G. Velez, MD, Stacy L. Pineles, MD, and Joseph L. Demer, MD, PhD

Biomechanical Analysis in Strabismus Surgery

This study aims to develop new diagnostic tests and computer models that will lead to improvements in strabismus surgery. Tests of binocular alignment and eye movements, as well as magnetic resonance imaging of the extraocular muscles, are being performed in the Institute's Clinical and Basic Science Ocular Motility Laboratory before and after strabismus surgery. To date, this research has fundamentally contributed to the knowledge of the functional anatomy of the extraocular muscles and connective tissues, and allowed discovery of causes of common strabismus and development of new types of surgeries. Investigator: Joseph L. Demer, MD, PhD

Genetic and Anatomic Studies of Eye Movement Disorders

This collaborative National Eye Institute-funded study is conducting magnetic resonance imaging of the extraocular muscles. This procedure clarifies the phenotypes and mechanisms of congenital cranial dysinnervation syndromes whose hereditary properties have been characterized using modern molecular genetics. Patients with these syndromes have severe forms of strabismus. Investigator: Joseph L. Demer, MD, PhD

Optical Coherence Tomography in the Newborn Eye

The purpose of this study is to better characterize the retina and optic nerve in newborns using spectral-domain optical coherence tomography (SD-OCT). SD-OCT has been used for many years to help diagnose and treat adults with eye diseases, but it has never been studied in newborns, where it could potentially help in the diagnoses of glaucoma, optic nerve hypoplasia, foveal hypoplasia, and colobomata, among many other disorders. Investigator: Sherwin J. Isenberg, MD

Optic Nerve in Amblyopia

Amblyopia is a major cause of childhood visual loss. This study uses high resolution, surface-coil magnetic resonance imaging to study optic nerve size in amblyopia. It tests the theory that the optic nerve is smaller than normal in amblyopia and that optic nerve size may be a limiting factor in restoration of vision by amblyopia treatment. Investigator: Joseph L. Demer, MD, PhD

Prevention of Visual Impairment in School-Age Children

In this community-based participatory intervention to promote the use of eyeglasses in schools, first- and second-grade students with refractive errors receive two pairs of eyeglasses, with one pair staying at home and the other in the classroom. School nurses collaborate with teachers in monitoring the use of eyeglasses in the classroom, and parents receive eye care education. Investigator: Anne L. Coleman, MD, PhD

Prospective Study to Determine the Proportion of Patients with Isolated Third, Fourth, and Sixth Nerve Palsies of Microvascular Versus Nonmicrovascular Etiology

Currently, magnetic resonance imaging scanning is only recommended in atypical cases (ie, young age, no vascular risk factors). The purpose of this multicenter study is to determine whether central nervous system abnormalities are detected in patients who otherwise would not have neuroimaging. Investigator: Stacy L. Pineles, MD

Sensory Processing and Learning

This study evaluates amblyopic patients, who are traditionally thought to be beyond the critical period for treatment. Those subjects will be enrolled and randomized to one of the two amblyopia therapies using a perceptual learning technique. Investigator: Stacy L. Pineles, MD

Sweep Visual Evoked Potential for Use in Amblyopia and Pediatric Optic Nerve Disorders

Using a new technique, investigators are measuring vision in preverbal children to diagnose and follow optic nerve diseases. Currently, treatment decisions are based on clinical examinations that are insensitive and reveal vision loss well after permanent damage has taken place. This technique allows more accurate examinations, which leads to provision of treatments at the first signs of vision loss and thereby decreases the risk of permanent damage. Investigators: Joseph L. Demer, MD, PhD, Sherwin J. Isenberg, MD, Stacy L. Pineles, MD, and Federico G. Velez, MD

2016–2017 Publications of the Full-Time Faculty

In the 2016–2017 academic year, UCLA Department of Ophthalmology full-time faculty published nearly 300 peer-reviewed articles and book chapters, further advancing vision-science research.

July 2016

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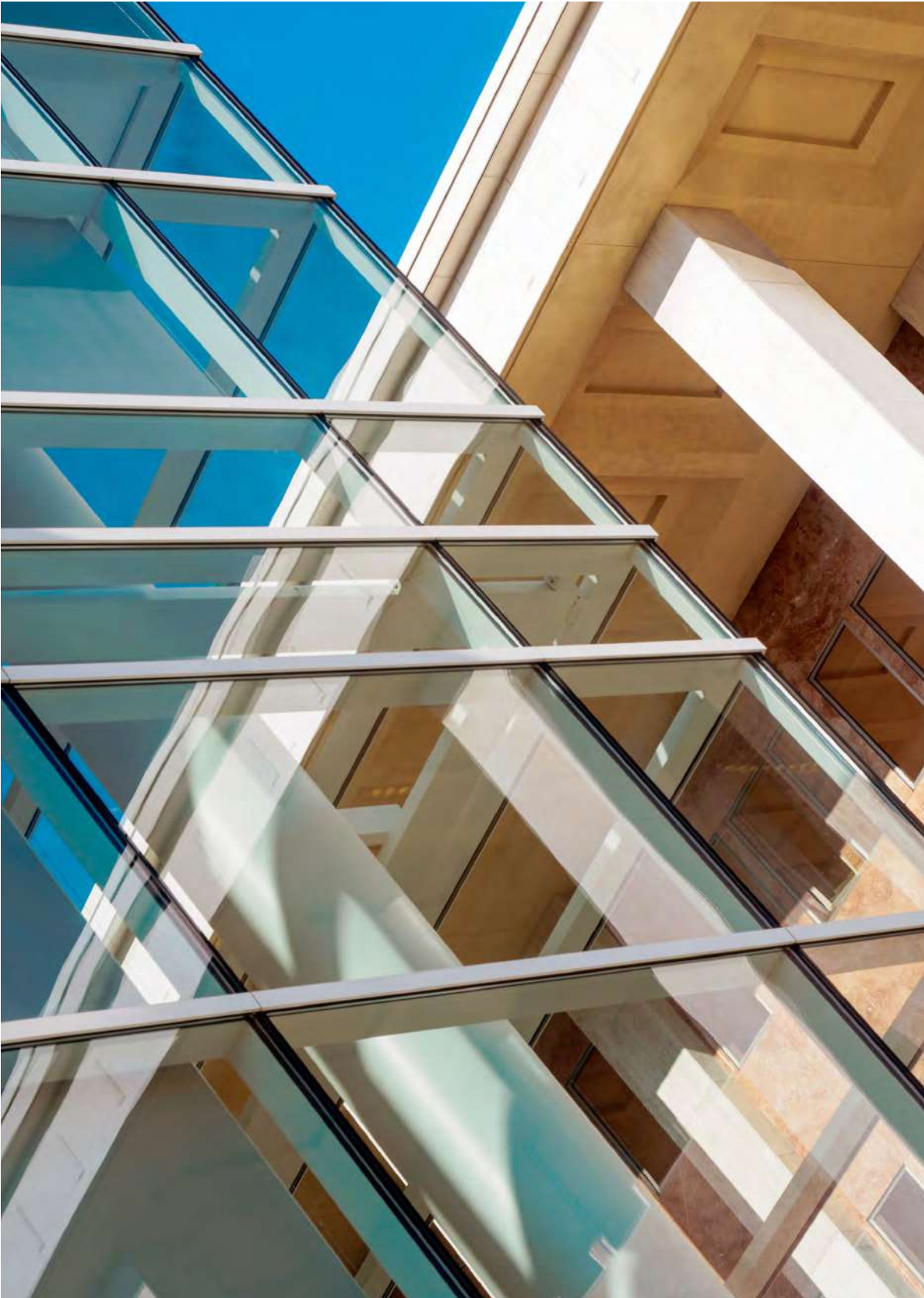
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Los Angeles, California 90095-7000
Phone: (310) 206-6035
Fax: (310) 794-1665
giving@jsei.ucla.edu





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