

Annual Report 2009–2010

Jules Stein Eye Institute



 Looking Towards the Future



The emblem of the Jules Stein Eye Institute is adapted from the schematic eye used by Sir Isaac Newton in his classic treatise on human vision—"Opticks"—published in 1704. The horizontal lines extending from the surface of the eye represent Newton's concept of the major colors that are in the spectrum of light.

Jules Stein Eye Institute Annual Report 2009–2010

director
Bartly J. Mondino, MD

faculty advisor
Debra B. Farber, PhD, DPhhc

managing editor
Gloria P. Jurisic

editors
Irene Y. Chen
Sara V. Nguyen

photography
Reed Hutchinson PhotoGraphics
J. Charles Martin

design
Robin Weisz/Graphic Design

production
The Oak Company

printing
Marina Graphic Center

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may be sent to:

Office of the Managing Editor
Jules Stein Eye Institute
100 Stein Plaza, UCLA
Box 957000
Los Angeles, California 90095-7000
Phone: (310) 206-7178

For more information on the Institute, see our website: www.jsei.org

View the Annual Report online at: jsei.org/annual_report.htm

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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 Jules 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 PhD from the University of Chicago at age 18 followed by a MD 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 Jules 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 Jules 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
Jules Stein Eye Institute
1994–present



Nelson C. Rising, Esq.

President and
Chief Executive Officer
Maguire Properties
2004–present



Ronald L. Olson, Esq.

Partner
Munger, Tolles, and Olson
1995–present



George A. Smith, Esq.

Consultant
1992–present



Gerald H. Oppenheimer

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



Katrina vanden Heuvel

Publisher and Editor
The Nation Magazine
1984–present



Andrea L. Rich, PhD

Retired President,
Chief Executive Officer and Director
Los Angeles County Museum of Art
Executive Vice Chancellor Emerita
UCLA
2007–present



Casey Wasserman

President and
Chief Executive Officer
The Wasserman Foundation
1998–present



Executive Committee

Director, Jules Stein Eye Institute
Chairman, UCLA Department of Ophthalmology
Bartly J. Mondino, MD

Associate Directors, Jules Stein Eye Institute
Wayne L. Hubbell, PhD
Gabriel H. Travis, MD

Vice-Chairmen, UCLA Department of Ophthalmology
Sherwin J. Isenberg, MD
Arthur L. Rosenbaum, MD*

Chief Administrative Officer, Jules Stein Eye Institute
Jonathan D. Smith

*Deceased



Jules Stein Eye Institute Executive Committee: (sitting from left to right) Drs. Gabriel Travis, the late Arthur Rosenbaum, Sherwin Isenberg, and Bartly Mondino; (standing from left to right) Mr. Jonathan Smith and Dr. Wayne Hubbell.

In Memoriam

Arthur L. Rosenbaum, MD

Arthur L. Rosenbaum, MD, Chief of the Pediatric Ophthalmology and Strabismus Division and the Brindell and Milton Gottlieb Chair in Pediatric Ophthalmology at UCLA's Jules Stein Eye Institute, died on June 22 at Ronald Reagan UCLA Medical Center after a long illness due to complications from cancer. He was 69 years old.

Dr. Rosenbaum was born on August 20, 1940, in St. Louis, Missouri. He was the eldest son of Evelyn and Dr. Harry Rosenbaum, a well-respected ophthalmologist. After earning his undergraduate degree at the University of Michigan and his medical degree at Washington University in St. Louis, he did his residency in ophthalmology at the Jules Stein Eye Institute. He then completed a fellowship in pediatric ophthalmology and strabismus at the Smith-Kettlewell Institute of Visual Sciences, followed by a second fellowship in retinoblastoma and pediatric ophthalmology at the National Children's Medical Center.

A member of the UCLA faculty since 1973, Dr. Rosenbaum served as pediatric ophthalmology and strabismus division chief since 1980. He served as a member of the Jules Stein Eye Institute's executive committee and as vice chairman of ophthalmology in the David Geffen School of Medicine at UCLA since 1990. He was appointed to the Brindell and Milton Gottlieb Chair in Pediatric Ophthalmology in 2008. At the request of the Gottliebs, their chair will be renamed the Arthur L. Rosenbaum, MD, Chair in Pediatric Ophthalmology.

Dr. Rosenbaum was an internationally respected surgeon, researcher, and teacher. His clinical practice specialized in childhood disorders of the eye and adult strabismus. During his tenure, he corrected strabismus in more than 10,000 children. He was one of the first investigators to explore the use of botulinum toxin injections to correct eye-muscle misalignment in strabismus, and he and his peers later used botulinum toxin injections to paralyze eye nerves in facial spastic disorders.



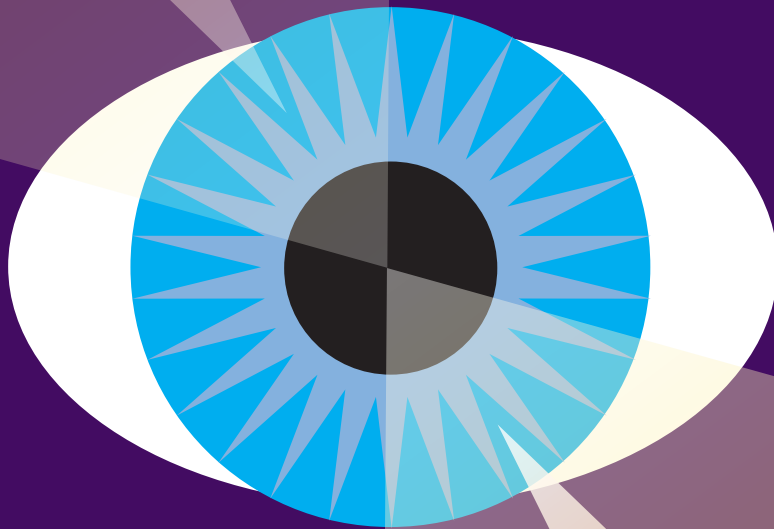
Dr. Arthur Rosenbaum

Among his numerous awards were the Lifetime Achievement Award from the American Academy of Ophthalmology and the Marshall M. Parks Medal from the Children's Eye Foundation. He published more than 200 articles and co-authored a major textbook on strabismus. He was a member of the editorial boards of several journals, including the American Medical Association's *Archives of Ophthalmology*. He was vice president of the International Strabismological Association and president of the American Association for Pediatric Ophthalmology, where he served on the board or as an officer for nine years.

Dr. Rosenbaum met his wife Sandra, when he performed strabismus surgery on her three-year-old son. Besides Sandra, his wife of 25 years, he is survived by son Steven Burick and a sister, Jane Sitrin.

"Arthur Rosenbaum was known for his personal qualities of loyalty, honesty, and integrity as much as he was recognized for his academic accomplishments and intellectual achievements," said **Bartly J. Mondino, MD**, Director of the Jules Stein Eye Institute and chair of ophthalmology at the David Geffen School of Medicine at UCLA. "Art served as my vice chairman of clinical affairs for 16 years and gave thousands of children the gift of clear vision. He will be deeply missed by his friends, colleagues, and patients."

Highlights





Dear Friends,



I am pleased to share some highlights of the 2009–2010 academic year, which continue to strengthen our commitment to preserve sight and prevent blindness. We are proud to present **Kouros Nouri-Mahdavi, MD**, a new faculty member, who will contribute greatly to our glaucoma activities. **Gary N. Holland, MD**, was appointed to the Jack H. Skirball Chair in Ocular Inflammatory Diseases, an endowment to support the research and teaching activities of a distinguished faculty member in this field. **Lynn K. Gordon, MD, PhD**, was named the first Associate Dean of Academic Diversity at the David Geffen School of Medicine at UCLA.

During the year, faculty members received special honors from a number of professional organizations, including the Visionary Award from the Foundation Fighting Blindness. Important research grants were awarded and renewed by the National Institutes of Health, the State of California, and other distinctive funding sources.

Among exceptional philanthropic gifts to the Jules Stein Eye Institute were an additional commitment from the **Walter Lantz Foundation** to convert the **Grace and Walter Lantz Endowed Chair in Ophthalmology** to a permanent appointment chair and a donation to create the **David and Randi Fett Orbital and Ophthalmic Plastic Surgery Fund** to support a fellow in this area. Moreover, significant bequests were received, including those through the trust of **Lydia Schenker**.

The loyal dedication of our donors and friends ensures that our Institute will maintain its standing as one of the world's preeminent eye research centers that is available to all who need its services. I offer much gratitude to the UCLA vision science community and extend warm wishes to our patients.

Sincerely,

A handwritten signature in black ink, appearing to read "Bartly J. Mondino".

Bartly J. Mondino, MD

Bradley R. Straatsma Professor of Ophthalmology
Director, Jules Stein Eye Institute
Chairman, Department of Ophthalmology
David Geffen School of Medicine at UCLA

Honors

Each year, as part of their ongoing academic pursuits, faculty members achieve notable recognition for their accomplishments and contributions. They give prestigious lectures around the world, participate in influential professional and community organizations, and serve as writers and editors for a wide range of scientific journals. In some cases, special honors are bestowed. Members of the faculty were honored for their contributions to ophthalmology and a new term chair holder was announced.

Foundation Fighting Blindness Visionary Awards

The Foundation Fighting Blindness hosted its Second Annual Los Angeles Dining in the Dark Visionary Awards Dinner on May 18, 2010. **Bartly J. Mondino, MD**, Chairman of the UCLA Department of Ophthalmology and Director of the Jules Stein Eye Institute, and **Bradley R. Straatsma, MD, JD**, Founding Director and Professor of Ophthalmology Emeritus at the Jules Stein Eye Institute, were each honored with the Visionary Award in recognition of their commitment to the advancement of science and technology in treating and preventing retinal degenerative diseases.

The Jules Stein Eye Institute is making significant advances in vision research, and the Foundation Fighting Blindness' singular dedication and generosity has played a critical role. "The Foundation has provided more than \$10 million to our outstanding vision scientists for research in the area of hereditary and degenerative retinal diseases over the course of about 25 years," explains Dr. Mondino.

A champion of scientific investigation, the Foundation has a considerable impact on blindness prevention. Notes Dr. Straatsma, "The Foundation Fighting Blindness has provided multiyear support for research at the

Jules Stein Eye Institute Director Dr. Bartly Mondino (left) and Founding Director Dr. Bradley Straatsma were honored with Visionary Awards from the Foundation Fighting Blindness.

(Photocomposite by John Lichtwardt)

Institute and is a partner in scientific studies to prevent and treat retinitis pigmentosa, Usher syndrome, and macular degeneration."

Research is the cornerstone of the Jules Stein Eye Institute's academic mission, and Dr. Mondino and Dr. Straatsma have devoted their life's work to furthering knowledge of specific vision processes and degenerative eye diseases, aspiring to eradicate global blindness.

Leading the academic pursuits of the Institute's faculty and trainees for the past 16 years, Dr. Mondino also treats patients and conducts research in the area of inflammatory and infectious eye diseases. He has published extensively on autoimmune diseases of the external eye and contact-lens-related corneal ulcers. He serves as Executive Vice President of the Association of University Professors of Ophthalmology and as a Medical Advisory Board Member of the Board of Directors for the Braille Institute.

Dr. Straatsma commenced his faculty appointment at UCLA in 1959. He was appointed Professor in 1962, Director of the Jules Stein Eye Institute in 1964, and Chairman of the Department of Ophthalmology in 1968, where he remained until 1994. In 2002, Dr. Straatsma graduated from the University of West Los Angeles School of Law (JD, Cum Laude). Currently, he is a member of the International Council of Ophthalmology and President of the International Council of Ophthalmology Foundation.



Jack H. Skirball Professor of Ocular Inflammatory Diseases



Dr. Gary Holland, Jack H. Skirball Professor of Ocular Inflammatory Diseases

Gary N. Holland, MD, Chief of the Cornea and Uveitis Division, has been appointed to the Jack H. Skirball Endowed Chair in Ocular Inflammatory Diseases. Dr. Holland has earned distinction as an international authority on infectious and inflammatory diseases of the eye. His clinical and research interests were established during his residency at the Jules Stein Eye Institute, when he was the first to describe the ocular manifestation of AIDS. He completed fellowship training in uveitis and cornea-external ocular diseases at the Francis I. Proctor Foundation, University of California, San Francisco School of Medicine, and fellowship training in corneal diseases and surgery at Emory University School of Medicine in Atlanta. He joined the UCLA faculty in 1985 and became division chief in 2000. He also serves as the Director of the Ocular Inflammatory Disease Center and the Institute's Clinical Research Center.

This endowment was made possible by a generous pledge from **The Skirball Foundation**, dedicated supporter of the Jules Stein Eye Institute and UCLA for more than 40 years.

Protein Society Award

Wayne L. Hubbell, PhD, Jules Stein Professor of Ophthalmology, received the 2009 Christian B. Anfinson Award from the Protein Society at its annual meeting in Boston, Massachusetts, on July 25, 2009. The award, which recognizes significant technical achievements in the field of protein science, was presented to Dr. Hubbell for the development, application, and advocacy of site-directed spin labeling of proteins. Site-directed spin labeling has developed into a widely utilized and well-accepted technique that is routinely applied to both soluble and membrane associated proteins. It provides information that cannot be obtained using other techniques, and it can readily be applied to protein systems that are at best extremely challenging for other spectroscopic or molecular tools. As a result of Dr. Hubbell's efforts, the community of scientists who use site-directed spin labeling has rapidly grown, and this field has made significant contributions to protein science.



Dr. Wayne Hubbell (left) receives the Christian B. Anfinson Award from Dr. Art Palmer, President of the Protein Society.



Mr. Al Pacino (left) and Dr. Gary Holland at the Commitment to a Cure Awards Gala held at the Beverly Wilshire Hotel

Jane Wyman Humanitarian Award

Gary N. Holland, MD, Jack H. Skirball Professor of Ocular Inflammatory Diseases and Chief of the Cornea and Uveitis Division, and **Mr. Al Pacino** were honored at the Southern California Chapter of the Arthritis Foundation's *Commitment to a Cure* Awards Gala on November 14, 2009. Both Dr. Holland and Mr. Pacino, who is a supporter of Dr. Holland's programs at the Jules Stein Eye Institute, received the Jane Wyman Humanitarian Award for their dedication to advancing patient care and research in the area of pediatric uveitis, a disease affecting many children with arthritis. The Arthritis Foundation also made a generous contribution to the Institute's Endowment for Children with Uveitis, the income from which supports patient care, education, and research programs dealing solely with inflammatory eye diseases in children.

Castle Connolly Lifetime Achievement Award

Leonard Apt, MD, Professor of Ophthalmology Emeritus (active), was honored with the Castle Connolly National Physician of the Year Award for Lifetime Achievement, in an awards ceremony held in New York City on March 22, 2010. The first physician to be board-certified in both pediatrics and ophthalmology, Dr. Apt came to UCLA in 1961, where he helped create pediatric ophthalmology as a new subspecialty in medicine. He is a founding member of the Jules Stein Eye Institute and is recognized as the founder of academic pediatric ophthalmology. He has made sweeping contributions to medicine, including the “Apt test” to differentiate fetal from adult hemoglobin in newborns and the development, with Sherwin J. Isenberg, MD, of an inexpensive antiseptic eye drop that has dramatically decreased the incidence of pediatric blindness in developing countries.



Dr. Leonard Apt (left), who received the Castle Connolly National Physician of the Year Award for Lifetime Achievement, with Dr. Stephen Tsang, a Jules Stein Eye Institute alumnus



Dr. Sherwin Isenberg was honored by CRE Outreach for his efforts to combat childhood blindness.

CRE Outreach Honors Pediatric Ophthalmologist

Sherwin J. Isenberg, MD, Laraine and David Gerber Professor of Ophthalmology, was honored by CRE Outreach at its “Castle in the Dark” fundraising gala in Los Angeles on June 19, 2010. CRE Outreach is a non-profit organization founded in 2006 to provide at-risk youth and the visually impaired with the opportunity to write and perform in their own original theatrical works. The group honored Dr. Isenberg for his relentless efforts for more than 20 years to combat childhood blindness in developing

countries. Dr. Isenberg serves as Vice-Chairman of the Department of Ophthalmology and directs the Ophthalmology Service at Harbor-UCLA Medical Center, while maintaining an active clinical practice at the Jules Stein Eye Institute. He is a prominent pediatric ophthalmologist whose studies have contributed significantly to reducing the incidence of adult blindness from post-operative infection and childhood blindness from infectious diseases in underserved areas.

Association for Research in Vision and Ophthalmology Fellows

The Association for Research in Vision and Ophthalmology has inducted several faculty members into its 2010 class of distinguished Fellows. Utilizing a point system for awarding a gold or silver level of fellowship, the prestigious honor recognizes its members for their accomplishments, leadership, and contributions to the association. These individuals join several other faculty members who were inducted into the inaugural class of Fellows in 2009.

2010 ARVO Gold Fellow:

Joseph Horwitz, PhD
Oppenheimer Brothers
Professor of Ophthalmology

2010 ARVO Silver Fellows:

Suraj P. Bhat, PhD
Associate Professor of
Ophthalmology

Anne L. Coleman, MD, PhD
The Fran and Ray Stark
Foundation Professor of
Ophthalmology

Gabriel H. Travis, MD
Charles Kenneth Feldman
Professor of Ophthalmology

American Academy of Ophthalmology Awards

UCLA ophthalmology faculty were honored by the American Academy of Ophthalmology for their outstanding contributions to the Academy, its scientific and educational programs, and to the field of ophthalmology. The awards were announced at the Academy's annual meeting in San Francisco in October 2009.

Life Achievement Honor Award:
Samuel Masket, MD

Senior Achievement Award:
Yaron S. Rabinowitz, MD

Achievement Awards:
Uday Devgan, MD
Laura E. Fox, MD
John A. Hovanesian, MD
Ralph D. Levinson, MD



Institute Rankings and Recognition

The Jules Stein Eye Institute was ranked as one of the top five American ophthalmology centers and the best in the Western United States for the 20th consecutive year. The **U.S. News & World Report** survey, which reviewed reputation rankings from board-certified specialists from across the country, was published in the magazine's August 2009 edition.

The Institute offers one of the top ophthalmology programs in the United States. In the 2009 survey of Best Programs by **Ophthalmology Times**, published on October 15, 2009, it ranked fourth in the Best Overall Program and Best Research Program categories. The Institute also ranked among the top in the nation for Best Ophthalmology Hospital and Best Clinical Program, assuming the fifth spot in each.



Research

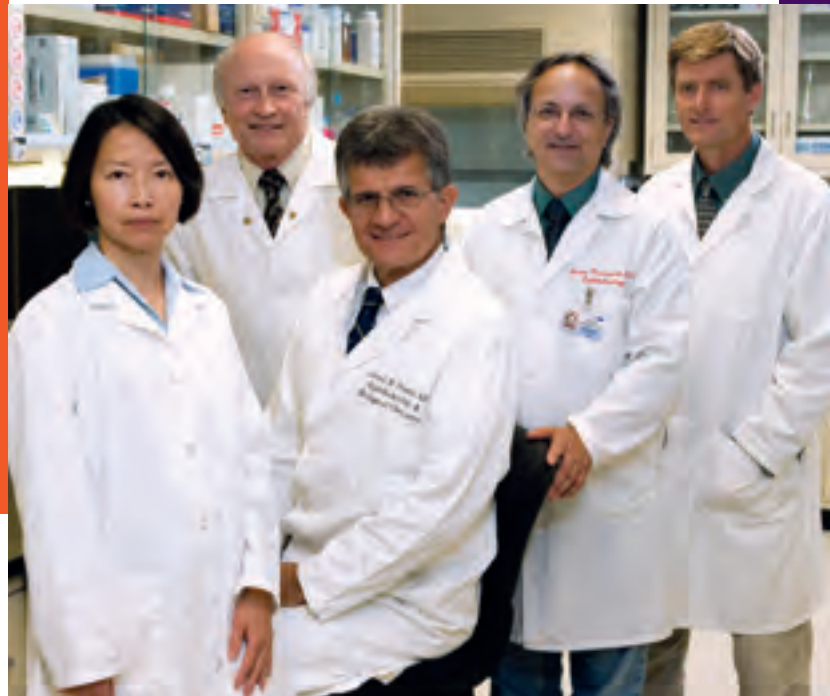
Research is a key component of the Institute's mission, and a high priority for faculty who often devote their life's work to furthering our knowledge of specific vision processes and eye diseases. Major research grants are routinely awarded to this effort each year. In 2009–2010, faculty members received important awards from both public and private organizations. New grants and grant renewals will enable faculty to further ongoing vision science investigations that have shown promise, and to undertake clinical trials that have direct application to some of the country's most common ophthalmic problems.

Stem Cell Treatment for Age-Related Macular Degeneration

A team of vision scientists at the Jules Stein Eye Institute has received a \$3.6 million grant from the State of California to take basic science discoveries and translate them into new stem cell therapies for age-related macular degeneration. The funding was awarded by the California Institute for Regenerative Medicine, the state agency that administers Proposition 71 funding for stem cell research.

The team, led by **Gabriel H. Travis, MD**, Charles Kenneth Feldman Professor of Ophthalmology and Professor of Biological Chemistry at UCLA, will develop a strategy for transplanting stem-cell derived retinal pigment epithelium cells into the eyes of patients with age-related macular degeneration. The retinal pigment epithelium is the single layer of cells in the retina that sits adjacent to the photoreceptor cells. The loss of retinal pigment epithelium cells is the major factor leading to vision loss in age-related macular degeneration patients.

Age-related macular degeneration is a blinding disease of the elderly, affecting nearly one in three individuals older than 75—a prevalence significantly higher than Alzheimer's disease. People with age-related macular degeneration lose their central vision, severely impairing their ability to read, watch television, or drive. Although new drug therapy has improved the prognosis for patients with wet age-related macular degeneration—the type in which new blood vessels are forming and invading the retina—there are no effective



From left, members of the research team to develop stem cell treatment for age-related macular degeneration include Jules Stein Eye Institute vision scientists: Drs. Xian-Jie Yang, Dean Bok, Gabriel Travis, Steven Nusinowitz, and David Williams. Dr. Guoping Fan, from the Eli and Edythe Broad Center of Regenerative Medicine and Stem Cell Research, is also a member of the team.

treatments for the more common dry form. As California's population ages, the incidence of age-related macular degeneration will continue to rise.

"This disease imposes a large social and economic burden on our society," says Dr. Travis. "A stem-cell-based transplantation strategy offers the real potential of slowing or arresting the progression of blindness in these patients."

By the end of the grant period, the researchers expect to have a new and well-tested stem-cell-based transplantation strategy that will be ready for Phase 1 clinical trials in age-related macular degeneration patients. "We have room to try many different things, and I am optimistic that we will end up with a strategy that can be beneficial for patients," says Dr. Travis. "Ultimately, the best treatment is likely to be a combination of cellular manipulations and drugs that will protect against further damage."

The Neuroprotective Effect of HSP70 Induction in Experimental Glaucoma

Natik Piri, PhD, Associate Professor of Ophthalmology, received a five-year grant from the National Eye Institute to investigate the neuroprotective effect of HSP70 induction in experimental glaucoma. Dr. Piri's study focuses on understanding the degeneration of retinal ganglion cells and their axons in the optic nerve, which is the cause of visual deficits in glaucoma patients. Reduction of intraocular pressure is not always successful in slowing the progression of the disease. New strategies are required to supplement, or even perhaps replace, intraocular pressure reduction in some patients in order to reduce the number of degenerating neurons and preserve the surviving retinal ganglion cells and their axons. The experiments in Dr. Piri's study will evaluate the neuroprotective role of HSP70 in retinal ganglion cells of the rat ocular hypertension glaucoma model and analyze mechanisms of its function. The goal is to learn more about the cellular mechanisms that trigger the optic nerve damage in glaucoma and, in doing so, lay the foundation for the development of new treatment approaches.



Associate Professor of Ophthalmology Dr. Lynn Gordon is investigating novel therapies to prevent blindness caused by proliferative vitreoretinopathy.

Novel Therapies to Prevent Blindness Caused by Proliferative Vitreoretinopathy

A four-year grant from the National Eye Institute was awarded to **Lynn K. Gordon, MD, PhD**, Associate Professor of Ophthalmology, to investigate novel therapies to prevent blindness caused by proliferative vitreoretinopathy. Proliferative vitreoretinopathy occurs after retinal detachment and severe ocular trauma and leads to both pre-retinal and subretinal scar formation, one of the major determinants of poor outcomes for patients. Current evidence implicates various cell types including the retinal pigment epithelium in an aberrant wound healing response. Dr. Gordon's study will test the hypothesis that down-regulation of "epithelial membrane protein 2" or its signal transduction pathway could be effective in prevention or therapy of proliferative vitreoretinopathy both *in vitro* and in an *in vivo* animal model of disease. Successful completion of the proposed work will identify the optimum strategy for prevention or early therapy for proliferative vitreoretinopathy, and form the basis of scientific evidence leading to clinical trials in human disease.



Dr. Natik Piri, Associate Professor of Ophthalmology, is studying the cellular mechanisms that trigger optic nerve damage in glaucoma, which is the cause of visual deficits in glaucoma patients.

Hedgehog Signaling in Photoreceptor Differentiation and Maintenance

Xian-Jie Yang, PhD, Professor of Ophthalmology, was awarded a four-year grant from the National Eye Institute to study Hedgehog signaling in photoreceptor differentiation and maintenance. The Hedgehog family of proteins plays an important role in the determination of neuronal cell fates and the maintenance of adult neural stem cell potentials. Previous studies and preliminary results indicate that Sonic hedgehog promotes retinal progenitor cell proliferation and affects specification of early born retinal neurons; however, the precise function of Hedgehog signaling in mammalian photoreceptor cell development and survival is not well understood. Dr. Yang will use molecular genetic approaches to elucidate the roles of Hedgehog signaling during mouse photoreceptor development and maintenance. Results of the research will clarify the function of an important signaling pathway in mammalian photoreceptor differentiation and survival. Moreover, these studies will provide new insights into mechanisms of photoreceptor degeneration and opportunities to develop novel therapies for combating retinal diseases.



Dr. Xian-Jie Yang, Professor of Ophthalmology, is studying signaling in photoreceptor differentiation and maintenance. Understanding the mechanisms of photoreceptor degeneration is important for combating retinal diseases.

Molecular Basis of Retinal Degenerations

Several members of the Retinal Biochemistry Laboratory received grants to study genes involved in inherited retinal diseases such as retinitis pigmentosa, cone-rod dystrophy, and ocular albinism. The Laboratory, under the direction of **Debora B. Farber, PhD, DPhhc**, Karl Kirchgessner Foundation Professor of Ophthalmology, is also trying to develop different approaches to therapeutic treatments, such as the use of microvesicles released by embryonic stem cells for transferring RNA or protein to diseased cells.

HOPE FOR VISION GRANTS:

Debora B. Farber, PhD, DPhhc, Karl Kirchgessner Foundation Professor of Ophthalmology
Characterization of the Interaction between ZBED4, a Novel Retinal Protein, and SAFB1

Novrouz Akhmedov, PhD, Associate Research Ophthalmologist, and **Debora B. Farber, PhD, DPhhc**
Studies on 7R, a Novel Protein that when Mutated Causes Autosomal Recessive Retinitis Pigmentosa

Diana Katsman, MD, Resident in Ophthalmology, EyeSTAR Program, and **Debora B. Farber, PhD, DPhhc**
Activation of Retinal Regenerative Potential by Embryonic Stem Cell-Derived Microvesicles

THE VISION OF CHILDREN FOUNDATION GRANT:

Alejandra Young, PhD, Postgraduate Researcher in Ophthalmology
Debora B. Farber, PhD, DPhhc (Mentor)
Interactions of the Melanosomal G-Protein-Coupled Receptor OA1 and Gai Proteins in the Retinal Pigment Epithelium



Gerald Oppenheimer Family Foundation Center for the Prevention of Eye Disease

The Gerald Oppenheimer Family Foundation Center for the Prevention of Eye Disease Program provides seed grants to support research into the discovery of agents and methods to prevent ophthalmic diseases. Areas of study include genetic and environmental factors that may cause eye disease, and pharmacological and natural agents to treat eye problems before they happen. Projects funded in 2009–2010 include:

Elena Bitrian, MD

Visiting Assistant Researcher and Adjunct Instructor of Ophthalmology

Joseph Caprioli, MD

David May II Professor of Ophthalmology
Determining Visual Field Progression Rates and Prediction through Humphrey Perimetry in Glaucoma

Thomas Chou, PhD

Associate Professor, Department of Biomathematics and Mathematics
Mathematical Models for Corneal Mechanics and Tonometer Calibration

Gergana Kodjebacheva, PhD

Postgraduate Researcher in Ophthalmology

Anne L. Coleman, MD, PhD

The Fran and Ray Stark Foundation Professor of Ophthalmology, Professor of Epidemiology
Prevention of Visual Impairment and Blindness in School-Aged Children

Sherwin J. Isenberg, MD

Laraine and David Gerber Professor of Ophthalmology, Professor of Pediatrics

Irwin K. Weiss, MD

Assistant Clinical Professor of Ophthalmology
Conjunctival Tissue Gas Monitoring to Prevent Eye Disease in Newborns

Federico G. Velez, MD

Assistant Clinical Professor of Ophthalmology
Development of an Electrical-Stimulation Device to Prevent Strabismic Amblyopia

Lawrence Yoo, PhD

Postgraduate Researcher in Ophthalmology

Joseph L. Demer, MD, PhD

Leonard Apt Professor of Pediatric Ophthalmology, Professor of Neurology
Biomechanical Characterization and Modeling of Ocular Tissue

American Recovery and Reinvestment Act

Jules Stein Eye Institute scientists received funding from the 2009 American Recovery and Reinvestment Act to support research. Passed by Congress in response to the economic crisis, the Recovery Act provided stimulus funds for federal contracts and grants among other initiatives. Institute projects receiving Recovery Act funding include:

Anthony J. Aldave, MD

Associate Professor of Ophthalmology
Cloning the Gene for Posterior Polymorphous Corneal Dystrophy

Suraj P. Bhat, PhD

Associate Professor of Ophthalmology
Gene Expression in Normal and Cataractous Lens

Oluwatoyin Fafowora, MD, MPH

Postgraduate Researcher in Ophthalmology
Heritability of Juvenile Glaucoma in a Genetically Diverse Population

Michael B. Gorin, MD, PhD

Harold and Pauline Price Professor of Ophthalmology
Genetics of Age-Related Maculopathy

Joseph Horwitz, PhD

Oppenheimer Brothers Professor of Ophthalmology
Alpha-Crystallin and Cataractogenesis

Wayne L. Hubbell, PhD

Jules Stein Professor of Ophthalmology, Professor of Chemistry and Biochemistry
Jules Stein Eye Institute Core Grant for Vision Research

David S. Williams, PhD

Research to Prevent Blindness Jules and Doris Stein Professor of Ophthalmology, Professor of Neurobiology
Kinesin in Photoreceptor Cells



Gerald Oppenheimer (center) and Dr. Leonard Rome, Senior Associate Dean of Research at the David Geffen School of Medicine at UCLA (right), receive an explanation about a project that was funded by the Gerald Oppenheimer Family Foundation Center for the Prevention of Eye Disease.

Clinical Studies

In 2009–2010, new clinical studies were added to approximately 70 clinical research trials underway at the Jules Stein Eye Institute.

Safety of Injected Drug Dose Levels for Acute Nonarteritic Anterior Ischemic Optic Neuropathy

Lynn K. Gordon, MD, PhD, Associate Professor of Ophthalmology, received funding to participate in a multicenter trial to evaluate the safety of injecting different dose levels of an experimental drug called “small interfering ribonucleic acid” into the human eye. The drug 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 nonarteritic anterior ischemic optic neuropathy. In this study, small interfering ribonucleic acid will temporarily stop the nerve cells in the eye from making a protein called “caspase 2,” which assists in removing cells that are damaged from lack of oxygen. Suppressing this protein could give the damaged cells more time to make repairs, which may prevent further loss of vision and possibly improve vision.



Harold and Pauline Price Professor of Ophthalmology Dr. Michael Gorin is leading a study to identify the hereditary and exposure risk factors that lead to the development of age-related maculopathy.

Resolution of Vitreomacular Adhesion Associated with Neovascular Age-Related Macular Degeneration with Intravitreal Microplasmin

Steven D. Schwartz, MD, Ahmanson Professor of Ophthalmology, is conducting an investigator-initiated, placebo-controlled clinical trial to evaluate the safety and efficacy of microplasmin intravitreal injection in subjects diagnosed with neovascular age-related macular degeneration with focal vitreomacular adhesion. It is believed that intravitreal microplasmin may offer physicians a safe agent for pharmacologic vitreolysis and nonsurgical resolution of focal vitreomacular adhesion in this patient population. The trial proposes to verify that release of vitreomacular adhesion can be induced and that microplasmin is safe. The secondary endpoint will be assessment of improved age-related macular degeneration outcomes.

A Study on the Genetics of Age-Related Maculopathy (GARM II)

Michael B. Gorin, MD, PhD, Harold and Pauline Price Professor of Ophthalmology, is continuing his research on age-related macular degeneration through a supplemental research project associated with the highly successful GARM I Study. GARM II is a nationwide web-based research study about age-related macular degeneration in the generation of adults that may be at increased risk of developing the disease (49 to 65 years old). The purpose of this study is to identify the hereditary and exposure risk factors that lead to the development of age-related maculopathy. The goal is to determine how the combination of genetic, health, and exposure factors such as light, diet, and smoking contribute to one's risk of developing this condition.

Education

Academic education at the Jules Stein Eye Institute is multifaceted, ranging from teaching medical students, residents, and fellows to leading national conferences. In the course of their educational duties, faculty members mentor, counsel, lecture, and demonstrate. They are responsible for hundreds of clinical and scientific publications each year, and entrusted with developing and sharing new approaches to science and medicine that will ultimately result in improved patient care. This year we are proud to introduce a new full-time faculty member, applaud the volunteer clinical faculty who were recognized at the Annual Clinical and Research Seminar for their exceptional contributions to the Institute's training programs, and acknowledge the appointment of a faculty member as the first Associate Dean of Academic Diversity at UCLA.

First Associate Dean of Academic Diversity

Lynn K. Gordon, MD, PhD, Associate Professor of Ophthalmology, was appointed the first Associate Dean for Academic Diversity at the David Geffen School of Medicine at UCLA. Her responsibilities focus on faculty recruitment and retention and on developing an inclusive and welcoming climate for all faculty members, with particular attention to issues affecting women and minorities.

“The real goal is to improve diversity in the school of medicine faculty, primarily by improving both recruitment and retention of women and underrepresented minorities. If we look at the demographics of our faculty, there hasn't been a great deal of change over the last decade. And yet we know that the composition of the medical school is quite different. We also know that having a diverse faculty is an important goal by itself but also because, when you have diversity, you are exposed to different ways of approaching problems and devising solutions,” explained Dr. Gordon.

Dr. Gordon, whose clinical expertise lies in the subspecialty of neuro-ophthalmology, received her doctorate and medical degree from Harvard University. She completed her ophthalmology residency and fellowship-training program in neuro-ophthalmology at the Jules Stein Eye Institute. Upon completion of her formal

training, and in part because she had a young family, she decided to pursue private practice with Howard R. Krauss, MD, a UCLA clinical faculty member. A volunteer faculty member since leaving UCLA, she returned part time to the Veterans Affairs Greater Los Angeles Healthcare System as assistant chief of ophthalmology in 1993, and then divided her time between that position and UCLA as a research ophthalmologist starting in 1995. Dr. Gordon was named chief of ophthalmology at the Veterans Affairs Greater Los Angeles Healthcare System in 1999, a position she held until her recent appointment. She joined the ophthalmology full-time faculty in 2000.

Commenting about what she hopes to accomplish as Associate Dean for Academic Diversity, Dr. Gordon stated, “Our medical school is outstanding. That being said, there's always a need for improvement. In my new position, I plan to draw on best practices from other institutions and adapt them to fit the mission at UCLA, applying the lens of diversity to create toolboxes for incoming faculty. I feel that such programs will not only improve conditions for women and minorities, but will benefit all faculty by strengthening mentorships between junior and senior members, and helping mid-level career faculty to discover opportunities that they may not know exist.”

Dr. Lynn Gordon, Associate Dean for Academic Diversity at the David Geffen School of Medicine at UCLA





Dr. Nouri-Mahdavi, Assistant Professor of Ophthalmology

New Faculty

Kouros Nouri-Mahdavi, MD, MSc, is Assistant Professor of Ophthalmology in the Glaucoma Division. Dr. Nouri-Mahdavi received his medical training and completed his first residency in ophthalmology in Iran. After fellowships at the Glaucoma Institute of Paris and Yale University, he served as Director of the Glaucoma Section at Iran University of Medical Sciences in Tehran. He joined the Jules Stein Eye Institute in 2002 as Visiting Assistant Professor of Ophthalmology in the Glaucoma Division; he also obtained his masters degree in clinical research from UCLA during this period. Dr. Nouri-Mahdavi returned to the Institute after completing a second residency in ophthalmology at University of California San Diego, where he continued his contribution to clinical research in glaucoma. Dr. Nouri-Mahdavi's clinical focus is the medical and surgical management of adult and pediatric glaucomas, cataract surgery in glaucoma patients, and complicated cataract surgeries. His research interests include surgical outcomes and new surgical approaches in glaucoma, optic nerve imaging, perimetry, and epidemiology of glaucoma.

Annual Clinical and Research Seminar

The Institute's most prestigious academic event, the Clinical and Research Seminar, was held on May 14, 2010. Sponsored by the Department of Ophthalmology Association, it provided an opportunity for discussion of emerging vision research and a celebration of teaching and faculty volunteerism. This year's seminar featured the 41st Jules Stein Lecture, the 8th Bradley R. Straatsma Lecture and the 8th Thomas H. Pettit Lecture.

41st Jules Stein Lecturer

Joe G. Hollyfield, PhD
Professor of Ophthalmology
Chairman, Ophthalmic Research
Llura and Gordon Gund Professor
of Ophthalmology Research
Cole Eye Institute,
Cleveland Clinic

8th Bradley R. Straatsma Lecturer

Michael T. Trese, MD
Chief, Pediatric and Adult
Vitreoretinal Surgery
William Beaumont Hospital
Professor of Biomedical Science
Oakland University
CEO, Associated
Retinal Consultants

8th Thomas H. Pettit Lecturer

R. Michael Duffin, MD
Adjunct Associate Professor
of Ophthalmology and
Visual Sciences
University of Utah Hospitals
and Clinics

A number of volunteer and clinical faculty received awards of distinction. **Jeremy E. Levenson, MD**, received the S. Rodman Irvine Prize, which recognizes excellence among Department of Ophthalmology faculty. Senior Honor Awards were given to **Howard R. Krauss, MD**; **Leon G. Partamian, MD**; and **George M. Rajacich, MD**, for volunteer service to the teaching programs of UCLA and affiliated hospitals. **David A. Hollander, MD**, received the Faculty Teaching Award for his contribution to residency education.



From left, Jules Stein Eye Institute Founding Director Dr. Bradley Straatsma and Director Dr. Bartly Mondino with Clinical and Research Seminar Lecturers Drs. Michael Trese, Michael Duffin, and Joe Hollyfield



Dr. Jeremy Levenson (center), recipient of the S. Rodman Irvine Prize, is shown with Drs. George Rajacich (left) and Howard Krauss (right), recipients of the Senior Honor Award. Dr. Leon Partamian (not shown) also received the Senior Honor Award.

15th Annual Vision Science Conference

The 15th Annual Vision Science Conference, sponsored by the National Eye Institute Science Training Grant in conjunction with the Jules Stein Eye Institute, was held on October 23–25, 2009. More than 70 basic scientists and clinical researchers gathered at UCLA's Lake Arrowhead Conference Center to partake in scientific discussions and memorable networking events. This year's conference was based on "Stem Cell Research" with **Gabriel H. Travis, MD**, Charles Kenneth Feldman Professor of Ophthalmology, and **Xian-Jie Yang, PhD**, Professor of Ophthalmology, giving key presentations on the topic.

Basic scientists and clinical researchers at the 15th Annual Vision Science Conference at UCLA's Lake Arrowhead Conference Center



12th Annual JSEI/SCCO Joint Optometric Symposium

Optometrists from across California traveled to Los Angeles to attend the 12th Annual Jules Stein Eye Institute and Southern California College of Optometry Joint Optometric Symposium focusing on Cornea and Retina. The course was held in the Institute's RPB Auditorium on January 10, 2010. Course Chair **Melissa W. Chun, OD**, Associate Clinical Professor of Ophthalmology, organized the program that included lectures by featured speakers from the Jules Stein Eye Institute and other institutions.

Aesthetic Eyelid and Orbitofacial Surgery Course

"Aesthetic Eyelid and Orbitofacial Surgery: Options and Finesse" was held at the Jules Stein Eye Institute on July 10–11, 2009. The course combined surgical demonstrations, a cadaver dissection, and didactic lectures that informed participants about the latest advances in the field of aesthetic and reconstructive surgery for eyelids and face. **Jonathan W. Kim, MD**, of Stanford University, gave this year's Robert Axelrod, MD Memorial Lecture, "The Retro-Orbicularis Oculi Fat Pad: Surgical Anatomy." Dr. Kim is an alumnus of the Institute's orbital and ophthalmic plastic surgery fellowship.



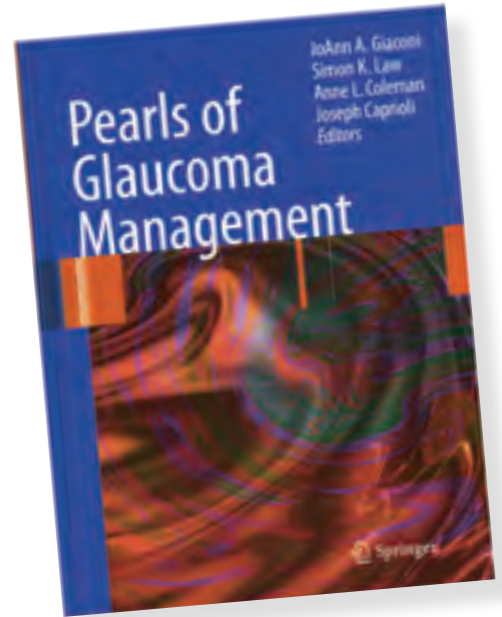
Aesthetic Eyelid and Orbitofacial Surgery Course co-directors, Drs. Robert Goldberg (left) and Catherine Hwang, the Jerome Comet Klein, MD, Fellow, are shown with course lab instructor and clinical faculty member, Dr. Jerome Klein. Dr. Klein supports this annual fellowship in honor of his late father, a renowned international facial plastic surgeon.

Comprehensive Ophthalmology Review Course

The Jules Stein Eye Institute and the Doheny Eye Institute teamed up to sponsor the fifth Comprehensive Ophthalmology Review course on March 11–14, 2010. Course co-directors **David Sarraf, MD**, Associate Clinical Professor of Ophthalmology at the Jules Stein Eye Institute, and **John Irvine, MD**, Professor of Ophthalmology at the Doheny Eye Institute, organized a program concentrating on the epidemiology, clinical presentation, diagnosis, and management of ophthalmological disease. The collaborative effort to develop this intensive four-day review, serving ophthalmology-training programs in Southern California, proved to be an overwhelming success.

Faculty Publish Book on Glaucoma Management

“Pearls of Glaucoma Management,” a new book by glaucoma faculty, provides general ophthalmologists and glaucoma specialists with valuable information and evidence-based recommendations for clinical practice. Chief Editor **JoAnn A. Giaconi, MD**, Assistant Clinical Professor of Ophthalmology, along with co-editors **Joseph Caprioli, MD**, David May II Professor of Ophthalmology; **Anne L. Coleman, MD, PhD**, The Fran and Ray Stark Professor of Ophthalmology; and **Simon K. Law, MD, PharmD**, Associate Clinical Professor of Ophthalmology, asked questions of the world’s experts in glaucoma. The answers provided are based on the literature and the authors’ own experiences to explain how they prefer to manage patients and specific problems in glaucoma to improve treatment outcomes.



Giaconi JA, Law SK, Coleman AL, Caprioli J. *Pearls of Glaucoma Management*, Springer-Verlag, New York, LLC, January 2010

Prestigious Named Lectures

Joseph Caprioli, MD, David May II Professor of Ophthalmology, presented the E. Michael Van Buskirk Lecture at Devers Eye Institute in Portland, Oregon. The lecture recognizes the outstanding contributions of a former chief of ophthalmology at Devers Eye Institute who is nationally recognized for his research in glaucoma.

Anne L. Coleman, MD, PhD, The Fran and Ray Stark Professor of Ophthalmology, presented the Bernice Brown Memorial Lecture at the 2009 Women in Ophthalmology Summer Symposium in San Diego, California. This annual lecture memorializes a renowned ophthalmic plastic and reconstructive surgeon and founding member of Women in Ophthalmology.



Dr. Joseph Caprioli



Dr. Anne L. Coleman

Philanthropy

“How wonderful it is that nobody needs to wait a single moment before starting to improve the world.”

—Anne Frank

Established in 1966 through the remarkable insight and generous philanthropy of **Dr. and Mrs. Jules Stein**, the Jules Stein Eye Institute continues to advance and expand its programs and facilities. Private philanthropy provides critical support for scientific innovations, exceptional education and training, and the finest, most compassionate therapeutic approaches.

More than 540 donors contributed this year to allow this important work to persevere. Significant bequests from the estate of **Cynthia Lasker** and the **Lydia Schenker Revocable Trust** were received, as well as generous gifts from **Randi and David Fett**, **The Walter Lantz Foundation**, **The Louis and Harold Price Foundation**, and many others.

Gifts to Further Indigent Care Programs

Since its inception, the Jules Stein Eye Institute has provided extensive outreach programs made possible by philanthropic support. More than 47-million Americans under age 65 lack health coverage, and in California, one out of every five does not have a medical plan. Several outreach activities at the Institute are geared to indigent patients in Los Angeles County, including the UCLA Mobile Eye Clinic and the Preschool Vision Screening Program. In addition, the Institute offers ophthalmic surgical services for individuals without medical insurance. Philanthropic commitments make these programs possible, and various gifts were made to support those involving indigent care.

Katrina vanden Heuvel, Jules Stein Eye Institute Board of Trustees member, made a significant contribution to underwrite two important programs: the Indigent Children and Families Ophthalmic Care Program and the Mobile Eye Clinic. The former was established as a resource for patients with no medical insurance who require eye surgery or other specialized care in order to preserve their vision. The program not only offers surgical services for both children and adults, but also

contact lenses for pediatric patients with congenital cataracts. The Mobile Eye Clinic has provided general eye care to underserved adults and children throughout Greater Los Angeles since 1975. More than 4,000 are seen annually throughout Southern California, and services include 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.

The Westwood Hills Women’s Club also made a generous donation to support the Indigent Children and Families Ophthalmic Care Program. The Club, organized in 1932 and later incorporated in 1939, was dedicated to the “advancement in all lines of general culture and the opportunity for social service in the community.” In 2009, it disbanded. **Bartly J. Mondino, MD**, Jules Stein Eye Institute’s Director, stated, “We are most grateful to **Mrs. Donna Obdyke**, Club President; her mother, **Mrs. Betty Lou Rochlen**, the Philanthropy Chair; and the entire Board of Directors for facilitating this important gift.”

Philanthropic commitments from our donors and friends ensure that the most vulnerable members of our community have access to the best eye care. Additional funding is vital to assure that services for disadvantaged families are available for years to come.



Drawing by a child seen in the UCLA Mobile Eye Clinic



Mrs. Donna Obdyke (left) and the late Mrs. Betty Lou Rochlen, present the check from the Westwood Hills Women’s Club to Dr. Bartly Mondino.

IN MEMORIAM

Frances Lasker Brody

Frances Lasker Brody left a generous gift to benefit the Jules Stein Eye Institute upon her passing on November 12, 2009, at the age of 93. She had long been affiliated with UCLA, and her bequest will be used to support programs under the supervision of Joseph Caprioli, MD, David May II Professor of Ophthalmology and Chief of the Glaucoma Division, and Melissa Chun, OD, FAAO, Associate Clinical Professor of Ophthalmology and Director of the Vision Rehabilitation Center.

Frances Lasker was born in Chicago in 1916 to Flora and Albert Lasker, who was a titan of the advertising world. During World War II, Frances met Sidney Brody while serving in a volunteer ambulance corps, and they were married in 1942. After the war, the couple moved to Los Angeles. The Brodys became influential members of the community as advocates of the arts, education, and health. They were founding benefactors of the Los Angeles County Museum of Art, which opened in 1965. Mrs. Brody helped found and served as president of the UCLA Art Council and spent time as a board member and overseer of numerous organizations dedicated to the arts. In addition, she was on the board of the American Red Cross Southern California Chapter.

Bradley R. Straatsma, MD, JD, Founding Director of the Jules Stein Eye Institute, observed, "It was a delight to know Frances Brody. She was an elegant lady who contributed greatly to the arts, science, and humanity."



Frances Brody with Founding Director of the Jules Stein Eye Institute Dr. Bradley Straatsma

IN MEMORIAM

David Gerber

David Gerber, an Emmy-, Golden Globe-, and Peabody Award-winning television producer, studio executive, and long-time supporter of the Jules Stein Eye Institute, passed away on January 2, 2010, at the age of 86 in Los Angeles. At his side was Laraine, his beloved wife of 39 years.

Mr. and Mrs. Gerber have supported the Institute for more than 25 years. In 1998, they endowed the Laraine and David Gerber Chair in Ophthalmology and, in 2007, made an additional pledge to convert the Gerber Chair to a permanent appointment chair. Their remarkable philanthropy will be used to create the Laraine and David Gerber Genetic Eye Research Center at the Institute. Mr. and Mrs. Gerber recognized the need to integrate current and future genetic eye disease research with gene therapy. Their investment will translate into improved treatments for, and it is hoped, the eventual cure of degenerative and hereditary eye diseases.

Bartly J. Mondino, MD, Director of the Jules Stein Eye Institute, reflected, "David's achievements are innumerable. His contributions to the television industry and his extraordinary philanthropy will provide an enduring legacy. We, at the Jules Stein Eye Institute, are grateful to have been associated with him."



David and Laraine Gerber

IN MEMORIAM

Martin H. Webster



Martin Webster (right) with Founding Director of the Jules Stein Eye Institute, Dr. Bradley Straatsma and wife Ruth Straatsma

Long-time Jules Stein Eye Institute supporter **Martin H. Webster** passed away on December 9, 2009, at the age of 92. Through his affiliation with **The Karl Kirchgessner Foundation**, he supported the Institute for more than 30 years.

The Karl Kirchgessner Foundation was organized in 1979 with the mission to support institutions actively engaged in providing services in the field of vision, principally to underserved populations such as the young, elderly, and disabled. Mr. Webster served as the Foundation's president from 1980 until 2009 and continued to provide guidance as a board member until his death. With his leadership, the Foundation underwrote the operations of the Mobile Eye Clinic, created The Karl Kirchgessner Foundation Chair in Vision Science to further

basic science investigations, and established The Karl Kirchgessner Foundation Ophthalmology Endowment Fund to foster promising areas of vision science research. In 1998, Mr. Webster oversaw the launch of the Foundation's Scientific Advisory Board, whose mission is to identify promising but underfunded researchers as candidates for Foundation support.

Bartly J. Mondino, MD, Director of the Jules Stein Eye Institute, noted, "Martin fulfilled his deeply held sense of duty to his profession and community through his service and philanthropic support. Countless patients received vision care, and numerous research projects were conducted due to the work of Martin and The Karl Kirchgessner Foundation. For this dedication, the Jules Stein Eye Institute will always be grateful, and Martin will be dearly missed."

Thank You

The Jules Stein Eye Institute is grateful for the generous and steadfast support of its research, education, patient care, and outreach activities.

This investment will influence ophthalmology and related disciplines at UCLA and throughout the broader vision community. Thank you for your commitment to these important endeavors.

MAJOR GIFTS OVER \$25,000

American Geriatrics Society, Inc.
Archangel Michael Foundation
Arthritis Foundation, Pacific Region
Diane and Robert Bigelow
Bruce Ford and Anne Smith Bundy Foundation
Children's Hospital Corporation
The Carl & Roberta Deutsch Foundation
Dr. and Mrs. David Fett
The Foundation Fighting Blindness
Friends of the Congressional Glaucoma Caucus Foundation, Inc.
Laraine Gerber
A.P. Giannini Foundation
Brindell Gottlieb
Carol and Timothy W. Hannemann
Richard S. Harris Trust
Estate of Josephine M. Hewitt
William & Margaret Fern Holmes Family Foundation
Hope for Vision
The Iacocca Family Foundation
Jules and Doris Stein UCLA Support Group
Estate of Mary Kathryn Taylor Kappler
The Karl Kirchgessner Foundation
Walter Lantz Foundation
Estate of Cynthia S. Lasker
Bert Levy
Macula Vision Research Foundation
Richard Malm
Ruth and George E. Moss
The Nordan Family
Gerald Oppenheimer Family Foundation
Oxford BioMedica (UK) Limited
The Louis and Harold Price Foundation, Inc.
Research to Prevent Blindness, Inc.
Arna Saphier Trust
Lydia Schenker Trust

Beth and David Shaw
The Simms/Mann Family Foundation
The Skirball Foundation
Jerome and Joan Snyder
The Fran and Ray Stark Foundation
Katrina vanden Heuvel
Vision of Children, Sam and Vivian Hardage, Co-Founders
Westwood Hills Women's Club
Plus numerous anonymous contributors

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

IN HONOR OF...

Leonard Apt, MD
Joseph Caprioli, MD
Anne L. Coleman, MD, PhD
Robert Drabkin
L. Scott Feiler, MD
Laura E. Fox, MD

Devin Freeman
Lynn K. Gordon, MD, PhD
Michael B. Gorin, MD, PhD
John D. Hofbauer, MD
Gary N. Holland, MD
Mary K. Johnson
Jule D. Lamm, OD
Kevin M. Miller, MD
Richard L. Pozil, OD
Arthur L. Rosenbaum, MD
Debora H. Stein
Bradley R. Straatsma, MD, JD

IN MEMORY OF...

Florence Cohen
J. Nicholas Counter III
Lily L. De Britto
Milton Gottlieb
Herbert L. Hutner
Leon Gerald Lipkin
Arthur L. Rosenbaum, MD
Jack L. Rubin
James Falender Sharp, MD



Endowed Professorships, Fellowships, and Other Funds

ENDOWED PROFESSORSHIPS

Ahmanson Chair in Ophthalmology

Established in 2005 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 2003 by Dr. Leonard Apt, Professor Emeritus of Ophthalmology and Founding Director of the Division of Pediatric Ophthalmology and Strabismus, with a gift from the trust of Frederic G. Rappaport, Dr. Apt's nephew

Joseph L. Demer, MD, PhD
2005–Present

Karen and Frank Dabby Endowed Chair in Ophthalmology

Established in 2007 as a term chair to support the activities of a distinguished faculty member in the area of orbital disease

Robert A. Goldberg, MD
2008–Present

Charles Kenneth Feldman Chair in Ophthalmology

Established in 1982 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 converted to a permanent chair in 2007 with an additional pledge

Joseph L. Demer, MD, PhD
2000–2004

Sherwin J. Isenberg, MD
2004–Present

Brindell and Milton Gottlieb Chair in Pediatric Ophthalmology

Established in 2005 as an administrative chair for the Division of Pediatric Ophthalmology and Strabismus, in honor of the late Dr. Arthur L. Rosenbaum

Arthur L. Rosenbaum, MD
2008–June 2010

Dolly Green Chair of Ophthalmology

Established in 1980 by Dorothy (Dolly) Green

Dean Bok, PhD
1984–Present

Ernest G. Herman Endowed Chair in Ophthalmology

Initiated in 2007 by Mr. Ernest G. Herman to support a vision-scientist or a clinician-investigator

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

Kolokotronos Chair in Ophthalmology

Established in 2004 by Wendy and Theo Kolokotronos 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 converted to a permanent chair in 2010 with an additional pledge

J. Bronwyn Bateman, MD
1993–1995

Sherwin J. Isenberg, MD
Scholar 1993–1995
Professor 1996–2004

Joseph L. Demer, MD, PhD
2004–2005

David May II Endowed Chair in Ophthalmology

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

Gary N. Holland, MD
1999–2004

Joseph Caprioli, MD
2004–Present

Oppenheimer Brothers Chair in Ophthalmology

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 converted to a permanent chair in 2006 with an additional pledge

Michael B. Gorin, MD, PhD
2006–Present

**Jack H. Skirball Endowed
Chair in Ocular
Inflammatory Diseases**

Initiated in 2007 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

**Jerome and Joan Snyder
Chair in Ophthalmology**

Established in 2007 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

**The Fran and Ray Stark
Foundation Chair
in Ophthalmology**

Established in 1992 as a term chair by the Fran and Ray Stark Foundation and converted to a permanent chair in 2007 with an additional commitment

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 Samuel Goldwyn, Jr.

Wayne L. Hubbell, PhD
1983–Present

**Bradley R. Straatsma, MD,
Endowed Chair
in Ophthalmology**

Established in 1994 to honor Bradley R. Straatsma, MD, Founding Director of the Jules Stein Eye Institute

Bartly J. Mondino, MD
2000–Present

**Vernon O. Underwood Family
Chair in Ophthalmology**

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

John R. Heckenlively, MD
1997–2004

Gary N. Holland, MD
2004–2009

**Edith and Lew Wasserman
Chair in 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

ENDOWED FELLOWSHIPS

Rosalind W. Alcott Fellowship

Established in 1978 for the training of outstanding post-doctoral fellows

Houman Vosoghi, MD
2009–2010

**Leonard Apt Endowed
Fellowship in Pediatric
Ophthalmology**

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

**The Thelma and William Brand
Director's Fund**

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

Houman Vosoghi, MD
2009–2010

**Steven and Nancy Cooperman
Fellowship Fund**

Established to support eye research and education, with emphasis on clinical ophthalmology

**Klara Spinks Fleming
Fellowship Fund**

Established in 1985 to support cataract research

**Frances Howard Goldwyn
Fellowship**

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

Rachel Feit-Leichman, MD
2009–2010

Elsa and Louis Kelton Fellowship

Endowed in 1982 to support postdoctoral research and training

Timmy A. Koor, MD
2009–2010

**Bert Levy Research
Fellowship Fund**

Established in 1995 to enhance the educational opportunities of vision science scholars and advance research in neuro-ophthalmology

David May II Fellowship Fund

Established to support advanced study and research in ophthalmology and vision science

Michael A. Kapamajian, MD
2009–2010

John and Theiline McCone Fellowship

Established to support and enhance education programs and fellowship training in macular disease

Allen Hu, MD
Atul Jain, MD
Pradeep S. Prasad, MD
Irena Tsui, MD
2009–2010

Abe Meyer Memorial Fellowship Fund

Established in 1969 to support clinical fellows at the Institute
Shu-Hong Holly Chang, MD
2009–2010

Adelaide Stein Miller Research Fellowship

Established in 1977 as a tribute to Dr. Jules Stein's sister
Geetha Ganti Vedula, MD
2009–2010

Harold and Pauline Price Fellowship

Established to support research and education in ophthalmology and vision care

Frederic G. Rappaport Fellowship in Retina/Oncology

Established in 2004 by Mrs. Jeanne A. Rappaport, as a memorial to her son, Frederic
Irena Tsui, MD
2009–2010

Ann C. Rosenfield Fund

Established in 2000 to support the Division of Orbital and Ophthalmic Surgery's International Fellowship Program
Imran Jarullazada, MD
2009–2010

Dr. Jack Rubin Memorial Fellowship

Established to support post-doctoral fellows

Sanford and Erna Schulhofer Fellowship Fund

Established to support post-doctoral research and training in vision science

Lee and Mae Sherman Fellowship Fund

Established in 1971 to support postdoctoral fellows
Catherine J. Hwang, MD, MPH
2009–2010

Jules Stein Research Fellowship

Established in 1982 to honor the memory of Charles Kenneth Feldman
Olivia L. Lee, MD
2009–2010

Vernon O. Underwood Family Fellowship Fund

Established in 1993 to support clinical fellows

ENDOWMENTS FOR RESEARCH, EDUCATION, AND PATIENT CARE

The Annenberg Foundation Fund
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Elsie B. Ballantyne UCLA Foundation Fund
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Albert Sarnoff Endowed Cataract Fund
Richard B. Shapiro Vision Fund
The Skirball Foundation Fund
Arthur Spitzer Fund
Dr. William F. Stein and Esther Elizabeth Stein Memorial Fund
Raymond and Ruth Stotter Vision Science Research Fund
Bradley R. Straatsma Research Fund
Barbara P. Taylor Fund
UCLA Center for Eye Epidemiology
Paul J. Vicari Endowed Cataract Research Fund
Uncle Claude Fund
Anne H. West Estate Fund
Daniel B. Whipple Fund
Pat and Joe Yzurdiaga Endowed Cataract Fund

Community Outreach

Much of the Jules Stein Eye Institute's reputation springs from its innovative vision research, which translates into first-class patient care, including care for those in underserved communities. Members of the Institute's family—Jules Stein Eye Institute Affiliates volunteers, donors, staff, faculty, fellows, and residents—have combined their talents to provide eye care to those who would normally find it difficult to afford vision screenings, contact lenses, eyeglasses, medical eye examinations, and surgery.

Volunteers Provide Free Eye Care at Remote Area Medical Clinic

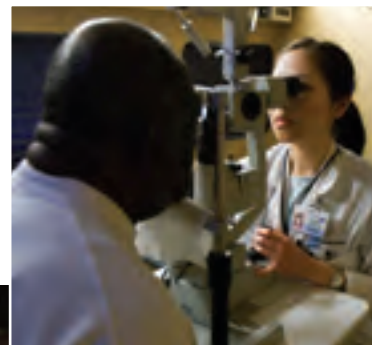
The UCLA Mobile Eye Clinic drove into an empty L.A. Sports Arena on Sunday, April 25, 2010, to take part in the Remote Area Medical free clinic. From April 27–May 3, the floor of the Sports Arena would be transformed into a vast field hospital, filled with a small army of volunteer medical professionals and thousands of prospective patients waiting for the chance to receive everyday healthcare services that many Americans take for granted.

Remote Area Medical is a publicly supported, all-volunteer, charitable organization whose original mission was to deliver basic medical aid to people in the world's inaccessible regions. The organization has begun working in urban areas as well and, last year, held its first Los Angeles-based clinic at the Forum in Inglewood.

The Jules Stein Eye Institute sent the UCLA Mobile Eye Clinic along with 53 volunteers to provide eye care services at the event.



Dr. Jennifer Huang examines a patient on the Mobile Eye Clinic. An estimated 1,500 patients were seen in the ophthalmology area.



Approximately 7,000 patients attended the 2010 Remote Area Medical Clinic in Los Angeles.

“This is the second time that Remote Area Medical has organized a free health clinic in Los Angeles and the second time that the Jules Stein Eye Institute has participated,” said **Anne L. Coleman, MD, PhD**, The Fran and Ray Stark Foundation Professor of Ophthalmology and director of the UCLA Mobile Eye Clinic. “The crowds at the Sports Arena are a testament to the healthcare crisis in Los Angeles,” she commented.

Anticipating an even greater demand for eye care services this year, Dr. Coleman, along with Institute Director **Bartly J. Mondino, MD**, recruited 40 ophthalmologists and 13 ophthalmic technicians to volunteer at the clinic. They also sent the Mobile Eye Clinic, a 39-foot-long bus specially outfitted with eye examination equipment.

“Reaching out to the underserved in the community is part of our mission. The response to our call for action from faculty and staff highlights the tremendous dedication to community service from the Jules Stein Eye Institute family,” said Dr. Mondino.

The weeklong clinic served close to 7,000 patients. For many, it was their only chance to see primary-care doctors, dentists, ophthalmologists, and other specialists.

Commenting on the experience, Dr. Coleman said, “Remote Area Medical 2010 Los Angeles was an extraordinary display of volunteerism coupled with deeply grateful patients. We were thrilled to contribute to providing needed eye services to these thousands of uninsured and under-insured patients.”

UCLA Mobile Eye Clinic

The UCLA Mobile Eye Clinic has provided general eye care to adults and children throughout Southern California since 1975. Supported by charitable contributions to the Jules Stein Eye Institute, a 39-foot-long bus specially equipped with eye examination equipment travels to schools, shelters, community health and senior citizen centers, health fairs, and organizations that assist homeless and low-income families. This past year, under the direction of **Anne L. Coleman, MD, PhD**, The Fran and Ray Stark Foundation Professor of Ophthalmology, more than 4,000 patients were seen by the Mobile Eye Clinic staff and ophthalmic personnel.

Jules Stein Eye Institute Affiliates Programs—A Year in Review

The JSEI Affiliates is a broad-based volunteer network established in 1990 to “support the Jules Stein Eye Institute’s three-tiered curriculum of research, education, and patient care.” The Affiliates sponsor several different vision education and patient care programs throughout Los Angeles, all of which are supported entirely by volunteer efforts and funded by membership dues.

2010 marked the tenth anniversary of the Affiliates **Preschool Vision Screening** program. This essential program, founded by Leonard Apt, MD, Founding Chief of the Division of Pediatric Ophthalmology and Strabismus and supported by Mrs. Gloria Kaufman and the Jules and Doris Stein UCLA Support Group, provides free vision screenings to the Los Angeles community. Under the supervision of four retired optometrists, Affiliates volunteers visited 20 local preschools during the 2009–2010 school year to screen 526 children



Judy Smith, coordinator of the Jules Stein Eye Institute Affiliates volunteer programs, assists a preschool student at a recent vision screening.

three-and-a-half to five years of age for simple refractive errors and eye muscle problems.

The **Shared Vision Program** continues to collect and recycle donated eyeglasses for those in need. Glasses are donated to clinic missions conducted by non-profit groups in Africa, Central America, and other developing nations. Jules Stein Eye Institute faculty and staff involved in international outreach activities also assist with distributing glasses to new patients.

The **MagniVision** program provides financial and volunteer support for the Jules Stein Eye Institute’s **Vision Rehabilitation Center**. Volunteers work on site at the Center and train low-vision patients on the use of magnifiers and various vision aids. Financial assistance from the Affiliates enables the Center to purchase new assistive and magnification devices for its lending library and supports its general needs.

Vision IN-School is a vision education program offered free of charge to fourth-to-sixth-grade students throughout Los Angeles. The curriculum is fun and interactive, covering the anatomy of

the eye, eye safety, and optical illusions. Volunteers visited eight different schools this past year, presenting the curriculum to more than 200 elementary students. The program emphasizes eye safety and injury prevention in hopes of inspiring children to protect their precious gift of sight.

Affiliates volunteers participated in various campus events to raise awareness and funds for vision-related programs. Two successful sponsorship events were held to attract funding for the **Make Surgery Bearable** program. This initiative provides plush Dr. Teddy bears to comfort each pediatric patient undergoing eye surgery at the Jules Stein Eye Institute.

The Affiliates participated in the Foundation Fighting Blindness’s third annual **2010 VisionWalk** to raise awareness and vital support to advance retinal eye disease research. Affiliates volunteers also participated in the summer 2010 **EyeSmart EyeCheck** community health initiative, providing free vision screenings for low-income patients.



Shared Vision donated more than 750 pairs of eyeglasses to a global health elective in Uganda last fall conducted by Doctors for Global Health.

Faculty



Anthony J. Aldave, MD

Associate Professor of Ophthalmology
Director of the Cornea Service
Member of the Jules Stein Eye Institute

Research Summary

Discovering the Genetic Basis of the Corneal Dystrophies

The corneal genetics laboratory, under Dr. Aldave's direction, is involved in the search for the genetic basis of inherited corneal disorders such as keratoconus, posterior polymorphous corneal dystrophy, and posterior amorphous corneal dystrophy. Additionally, the laboratory is investigating the utility of RNA interference in the management of the TGFBI dystrophies.



Public Service

Chair, International Advisory Committee of Tissue Banks International

Vice Chair, American Academy of Ophthalmology Knowledge Base Development Project, Cornea and External Disease Panel

Member, American Academy of Ophthalmology Ethics Committee

Associate Examiner, American Board of Ophthalmology

Reviewer for many scientific journals

Honors

Invited Speaker at the Annual Rocky Mountain Lions Eye Institute Ophthalmology Symposium in Denver, Colorado

Invited Speaker at the Annual Meeting of the American Academy of Ophthalmology in San Francisco, California

Invited Speaker at the 19th Annual Iranian Congress of Ophthalmology in Tehran, Iran

Invited Speaker at the 25th Malaysia-Singapore Ophthalmic Congress in Kuala Lumpur, Malaysia

Invited Speaker at the Fuchs Corneal Dystrophy Symposium in Baltimore, Maryland

Visiting Professor at the Department of Ophthalmology, California Pacific Medical Center in San Francisco, California

Visiting Professor at the King Khaled Eye Specialist Hospital in Riyadh, Saudi Arabia

Research Grants

National Eye Institute: Cloning the Gene for Posterior Polymorphous Corneal Dystrophy (received an ARRA Administrative Supplement), 9/30/05–8/31/11

Gerald Oppenheimer Family Foundation Center for the Prevention of Eye Disease: Large Scale Sequencing of the Common Posterior Polymorphous Corneal Dystrophy Candidate Gene Interval, 1/1/09–12/31/09

Anthony C. Arnold, MD

Jerome and Joan Snyder Professor of
Clinical Ophthalmology

Chief of the Neuro-Ophthalmology Division

Director of the UCLA Optic Neuropathy Center

Member of the Jules Stein Eye Institute

Research Summary

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 consultant for an international multicenter 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.

Public Service

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

Faculty, Lancaster Course in Ophthalmology, Colby College

President, North American Neuro-Ophthalmology Society

Board of Directors Member, American Board of Ophthalmology

Councilor, American Academy of Ophthalmology,
North American Neuro-Ophthalmology Society

Reviewer for many scientific journals



Richard S. Baker, MD

Associate Professor of Ophthalmology

Dean of the College of Medicine,
Charles Drew University of Medicine and Science

Associate Dean of the David Geffen
School of Medicine at UCLA

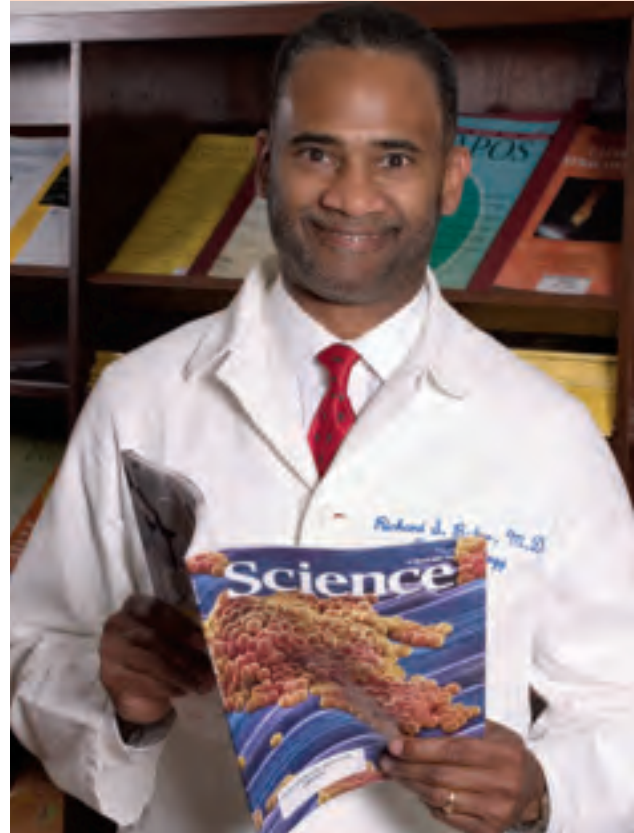
Member of the Jules Stein Eye Institute

Research Summary

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 state-wide databases to produce definitive population-based estimates of the distribution and the determinants of major ophthalmic diseases and their treatments.

As Director of the Charles Drew Center for Health Services Research, Dr. Baker works closely with collaborators at the Jules 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

Board Member, Los Angeles County Medical Association
Board Member, Association of Minority Health Professions Schools
Co-Founder and Board Member, Los Angeles Eye Institute
Commissioner, Blue Ribbon Commission on
Los Angeles Grocery Industry and Community Health
Member, South Los Angeles Health Care Leadership Roundtable
Reviewer for multiple NIH and AHRQ Special Emphasis Panels
Reviewer for many scientific journals

Research Grants

National Cancer Institute/Morehouse School of Medicine:
National Black Leadership Initiative on Cancer
Community Networks Program, 9/1/06–10/31/10

Suraj P. Bhat, PhD

Associate Professor of Ophthalmology
Member of the Jules Stein Eye Institute

Research Summary

Molecular Biology of Vision

Dr. Bhat's laboratory conducts research in the regulation of gene expression during differentiation and development of the vertebrate eye. This involves isolation and characterization of genes and gene products; identification of the attendant regulatory elements; and study of the regulatory controls in both *in vivo* and *in vitro* systems with manipulated gene sequences.

Two areas of research are currently under investigation that will provide insight into molecular mechanisms that developmentally predispose the eye to visual impairment through cataracts, myopia, and retinal diseases including age-related macular degeneration (AMD). One area of study is the developmental and tissue-specific control of the heat shock promoter of the α B-crystallin gene and the physiological function of the α B-crystallin protein in the ocular lens and non-transparent tissues such as the retina, retinal pigment epithelium (RPE), and the brain. Technically this work involves gene manipulations and their consequences on the phenotype, both *in vitro* (cultured cells) as well as *in vivo* with transgenic animals. Studies on the regulation of the expression of α B-crystallin are focused on heat-shock transcription factor 4 (HSF4), which Dr. Bhat's laboratory reported to be the predominant heat shock transcription factor of the developing ocular lens and whose post-natal expression correlates with early childhood Lamellar cataracts. Studies on the protein involve investigations on the functional status of α B-crystallin in the lens and the RPE (in particular its relation to AMD) with a focus on elucidating its 'non-crystallin' function, which is relevant both in the transparent as well as in the non-transparent physiology. Another area of study is control of the growth of the eye globe with special emphasis on neurogenesis (generation of neurons) in the retina.

Public Service

Member, National Advisory Eye Council,
National Eye Institute, National Institutes of Health

Member, University of California, Council on Research
Member, Joint Working Group INDO-US Collaboration in
Vision Research

Member, Scientific Advisory Board for the Eye Research
Institute of Oakland University

Executive Editor, *Experimental Eye Research*

Editor, *Molecular Vision*

Editorial Board, *Developmental Neuroscience*

Reviewer for many scientific journals

Honors

2010 ARVO Silver Fellow, Association for Research in
Vision and Ophthalmology

Research Grants

National Eye Institute: Gene Expressions in Normal and
Cataractous Lens (received an ARRA Administrative Supplement),
6/1/06–5/31/11



Dean Bok, PhD

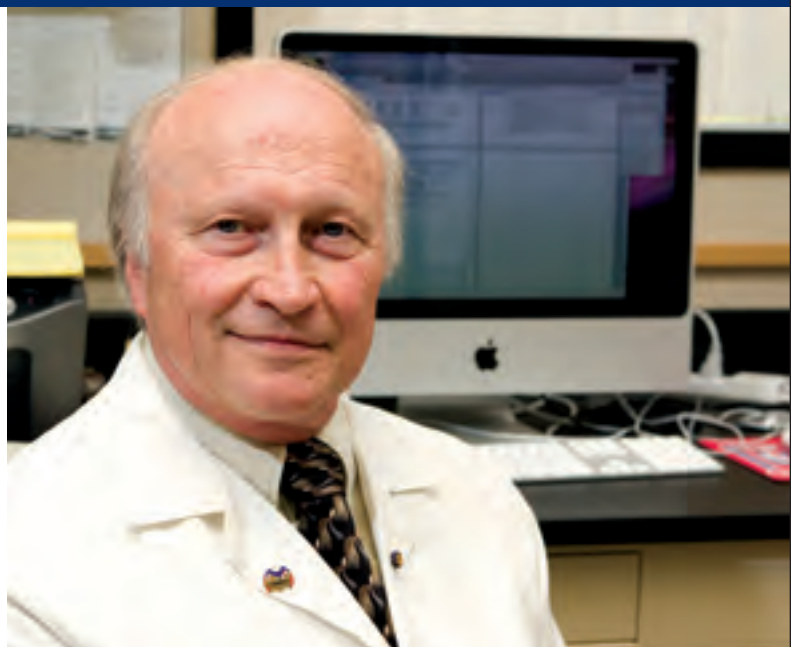
Dolly Green Professor of Ophthalmology
Distinguished Professor of Neurobiology
Member of the Jules Stein Eye Institute
Member of the Brain Research Institute

Research Summary

Cell and Molecular Biology of the Retina

Dr. Bok's research interests involve the cell and molecular biology of the normal and diseased retina. In one research area, he is identifying and characterizing genes specific to retinal pigment epithelium (RPE) and exploring interactions that take place between RPE and retinal photoreceptors. The RPE performs a multitude of functions in the retina, including the transport of nutrients, ions, and fluid; the uptake and processing of vitamin A; and the daily removal of outer segment disc membranes that have been discarded by the photoreceptors. A second area of research involves the study of animal models of human retinitis pigmentosa and macular degeneration.

Dr. Bok is using the techniques of cell and molecular biology to determine the proteins responsible for photoreceptor degeneration. One of the proteins under study in mice and humans is rds/peripherin. Because of a gene mutation, this protein is defective in a strain of mice called rds. As a result, the photoreceptors fail to form their light-sensitive organelles and eventually die. Dr. Bok and his collaborators have prevented blindness in these mice by injecting an artificial gene for rds/peripherin that performs normally. They are currently placing human rds/peripherin mutations into mice in order to study the mechanisms that cause photoreceptor death. Attempts are being made to slow the process of photoreceptor degeneration by delivery of neurotrophic factors into the retina by nonpathogenic viruses. Finally, with new information regarding the genetics of age-related macular degeneration, Dr. Bok and collaborators are studying mechanisms whereby the alternative complement pathway of the immune system contributes to this disease.



Public Service

Member, Scientific Advisory Board: E. Matilda Ziegler Foundation for the Blind, The Karl Kirchgessner Foundation, The Foundation Fighting Blindness, and the Macula Vision Research Foundation

External Advisory Board, Center of Biomedical Research Excellence, University of Oklahoma Health Sciences Center and the Macular Telangiectasia Project, Lowy Medical Research Institute, LTD

Editorial Board Member, *International Review of Cytology*
Reviewer for many scientific journals

Research Grants

Macula Vision Research Foundation: Identification and Cellular Localization of Gene Products that Affect Photoreceptor Survival in Inherited Retinal Degeneration, 4/1/08–3/31/11

Foundation Fighting Blindness: Center Grant (Center Director, with other investigators), 7/1/05–6/30/10

Daljit S. and Elaine Sarkaria Stargardt Macular Dystrophy Research Fund: Clinical Studies of Stargardt Disease and Development of a New Mouse Model of Stargardt Disease (Principal Investigator: Steven Nusinowitz, PhD, with other investigators), 7/1/07–6/30/11

National Eye Institute: Development of Complement Modulating Therapeutics for AMD (Principal Investigator: Gregory S. Hageman, PhD, with other investigators), 8/1/06–7/31/11

National Eye Institute: RDS Mutations; Gene Therapy for ADRP, Macular Degeneration and Pattern Dystrophy (Principal Investigator: Alfred S. Lewin, PhD, with other investigators), 9/1/07–8/31/11

Joseph Caprioli, MD

David May II Professor of Ophthalmology
Chief of the Glaucoma Division
Member of the Jules Stein Eye Institute

Research Summary

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 that 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 Task Force

Clinical Volunteer, Venice Family Clinic

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

Reviewer for many ophthalmic journals

Honors

Presented the E. Michael van Buskirk Lecture at Devers Eye Institute in Portland, Oregon

Research Grants

Pfizer: Measurement and Prediction of Progression Rates in Early and Moderately Advanced Glaucoma, 9/19/07–3/31/10

National Eye Institute: The Neuroprotective Effect of HSP72 Induction in Experimental Glaucoma (Principal Investigator: Natic Piri, PhD), 9/30/09–8/31/14

Gerald Oppenheimer Family Foundation Center for the Prevention of Eye Disease: Determining Visual Field Progression Rates and Prediction through Humphrey Perimetry in Glaucoma, 1/1/10–12/31/10



Richard Casey, MD

Associate Clinical Professor of Ophthalmology

Faculty of Charles Drew University of
Medicine and Science

Member of the Jules Stein Eye Institute

Research Summary

Cornea External Disease

Dr. Casey's research is focused on improving treatment for patients with corneal disease. He is collaborating with the Glaucoma and Ophthalmic Pathology Divisions on clinical research projects to understand the nature of co-morbid conditions, such as glaucoma and dry eye disease, on the long-term success of various corneal transplant procedures. He is also engaged in research to evaluate the ocular surface of patients undergoing corneal transplantation surgery, and intends to establish previously undescribed clinical-pathologic correlation with tear insufficiency and epithelial abnormalities. The goal of these efforts is to improve the success of corneal transplantation and long-term transplant survival.

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 underserved communities of Los Angeles, assessing unmet needs in vision health, and developing innovative strategies to meet these deficits. He participated in the establishment of the Los Angeles Ophthalmology Medical Group to provide comprehensive eye care services, particularly to those underserved regions of Los Angeles. He continues his work through the Los Angeles Eye Institute to increase access to quality eye care for all members of the greater community, regardless of their ability to pay for such services.

Public Service

Lead Physician, Martin Luther King, Jr. Multi-Service
Ambulatory Care Center

Co-Founder and Chairman, The Los Angeles Eye Institute

President, The Los Angeles Ophthalmology Medical Group, Inc.



Anne L. Coleman, MD, PhD

The Fran and Ray Stark Professor of Ophthalmology

Professor of Epidemiology

Director of the UCLA Center for Eye Epidemiology and the UCLA Mobile Eye Clinic

Member of the Jules Stein Eye Institute

Research Summary

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 (AMD), including the study of lifestyle limitations imposed on patients with these kinds of eye diseases. Clinical projects include studies on dietary vitamin intake and open angle glaucoma, the effects of yoga on glaucoma, and glaucomatous visual field and optic nerve progression.

Public Service

Chair, Planning Committee, National Eye Health Education Program (NEHEP), National Eye Institute

Secretary for Quality Care, American Academy of Ophthalmology

Director, H. Dunbar Hoskins Jr., MD Center for Quality of Eye Care

Consultant, Ophthalmic Devices Panel, Food and Drug Administration

Chair, Program Committee, American Glaucoma Society

Member, Board of Trustees, Helen Keller International

Executive Editor, *American Journal of Ophthalmology*

Honors

2010 ARVO Silver Fellow, Association for Research in Vision and Ophthalmology

Presented the Bernice Brown Memorial Lecture at the 2009 Women in Ophthalmology Summer Symposium in San Diego, California

Research Grants

National Eye Institute: Ocular Hypertension Treatment Study (OHTS), 1/1/00–12/31/09

Friends of the Congressional Glaucoma Caucus Foundation: Student Sight Savers Program, 12/21/04–11/30/10

Alcon Laboratories: Alcon Funding, 12/1/07–11/31/09



Joseph L. Demer, MD, PhD

Leonard Apt Professor of Pediatric Ophthalmology
Professor of Neurology
Chief of the Comprehensive Ophthalmology Division
Member of the Jules Stein Eye Institute

Research Summary

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 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. The project also involves the study of an animal model of strabismus expressing genes which cause binocular misalignment in humans.

Dr. Demer is also conducting a National Eye Institute study on magnetic resonance imaging of the extraocular muscles, which may clarify the phenotypes and mechanisms of congenital cranial dysinnervation syndromes. Patients with these syndromes have severe forms of strabismus. A project funded by Roy and Lillian Disney through Research to Prevent Blindness investigates optic nerve size, to determine if subtle optic nerve disorders are associated with amblyopia, a common cause of visual loss in children.

Public Service

Editorial Board Member, *Investigative Ophthalmology and Visual Science*

Associate Editor, *Strabismus*

Grant Reviewer, United States Public Health Service

Reviewer for many scientific and clinical journals

Scientific Advisory Committee Member,
Knights Templar Eye Foundation

Scientific Advisory Committee, Eye Sight Foundation of Alabama
Council, International Strabismological Association

Research Grants

National Eye Institute: Biomechanical Analysis in Strabismus Surgery, 5/1/06–4/30/11

National Eye Institute/Children's Hospital Boston: Genetic and Anatomic Basis of the Fibrosis Syndrome, 12/1/08–11/30/10

Research to Prevent Blindness: Walt and Lilly Disney Award for Amblyopia Research, 7/1/04–12/31/10



Sophie X. Deng, MD, PhD

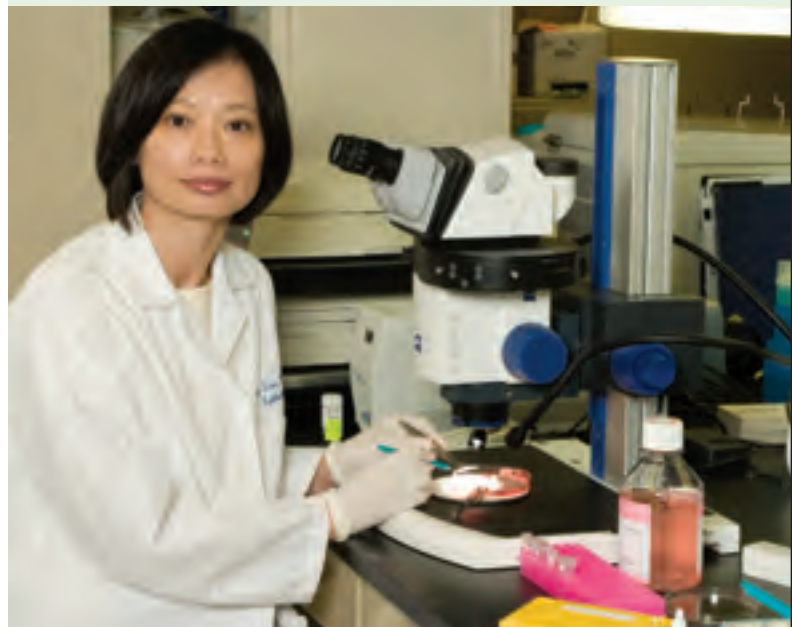
Assistant Professor of Ophthalmology
Member of the Jules Stein Eye Institute
Member of the UCLA Jonsson
Comprehensive Cancer Center

Research Summary

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 the ongoing clinical studies that Dr. Deng conducts shows correlated cellular changes in the cornea and limbus using laser scanning *in vivo* confocal microscopy in patients with limbal stem cell deficiency. Damages to the limbal stem cells can be detected using this new technology before the onset of the clinical presentation. This new technique could allow for a timely diagnosis and accurate monitoring of disease progression.

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 Wnt signal transduction pathway in human limbal stem/progenitor cells is under investigated. Recent study in her laboratory reveals that activation of the Wnt/ β -catenin promotes self-renewal of limbal stem cells. 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. The second ongoing project in Dr. Deng's laboratory is to study the homeostasis of the corneal epithelial cells in normal and wound healing conditions in a transgenic mouse model. The third research area is to achieve patient specific therapy by regenerating autologous limbal stem cells from various types of multipotent stem cells through *ex vivo* transdifferentiation.



Public Service

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

Research Grants

Gerald Oppenheimer Family Foundation Center for the
Prevention of Eye Disease: Regeneration of Limbal
Stem Cells from Epidermal Epithelial Stem Cells and
Induced Pluripotent Stem Cells, 7/1/09–6/30/10

Inspire Pharmaceuticals, Inc.: A Randomized, Multicenter,
Double-Masked, Placebo-Controlled, Parallel-Group
Safety & Efficacy Study of Azithromycin Ophthalmic Solution,
9/3/09–9/2/10

Gordon L. Fain, PhD

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

Member of the Jules Stein Eye Institute

Research Summary

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.

Honors

Fellow, Helen R. Whiteley Center at Friday Harbor Marine Laboratory, University of Washington

Research Grants

National Eye Institute: Physiology of Photoreceptors, 8/1/08–7/31/12



Debora B. Farber, PhD, DPhhc

Karl Kirchgessner Foundation Professor of Ophthalmology
Member of the Jules Stein Eye Institute
Member of the Brain Research Institute
Member of the Molecular Biology Institute

Research Summary

Retinal Biochemistry, Molecular Biology, and Genetics of Retinal Degenerations

Dr. Farber's research focuses on the isolation and characterization of genes involved in inherited retinal diseases. Her team has cloned several genes encoding enzymes and proteins that play a key role in vision, including the β -PDE gene, that leads to blindness in mice and dogs, and causes one type of autosomal recessive retinitis pigmentosa (arRP) (utilizing gene therapy methods, they rescued mice photoreceptors by delivering the normal gene to these cells); *RP1* (responsible for a type of autosomal dominant RP); the gene causing disease in the *rd7* mouse—a model for Enhanced S-Cone Syndrome; the β -transducin gene, disrupted in the *Rd4* mouse, another model of retinal disease; and the mouse homologue of the gene causing X-linked juvenile retinoblastoma (*Xlrs1*).

Dr. Farber's group is also working 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 that mutations in both SP4 and β -transducin cause digenic arRP and cone-rod dystrophy (arCRD). Other projects include the identification of cone genes (mutations in *7R* and *ZBED4* cause arRP and arCRD); the characterization of animal models of ocular albinism, which are affected with permanent visual impairment; and the study of microvesicles released by mouse embryonic stem cells that transfer RNA or protein to other cells, *in vitro*.



Public Service

Scientific Advisory Board Member: the Foundation Fighting Blindness; the Center for Vision Research, State University of New York at Syracuse; The Vision of Children Foundation; and an Advisor for The Canadian Retinitis Pigmentosa Foundation

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

Honors

Keynote Speaker at the VI Congreso Asociacion de Investigacion en Vision y Oftalmologia in Buenos Aires, Argentina

Research Grants

National Eye Institute: Molecular Mechanisms in Retinal Degenerations, 7/1/06–11/30/11

National Eye Institute: Stem Cell Microvesicles: Potential Tools for Retinal Regeneration, 12/1/07–11/30/09

Foundation Fighting Blindness: Center Grant (Center Director: Dean Bok, PhD, with other investigators), 7/1/05–6/30/10

The Vision of Children Foundation: Does a Constitutively Active $G\alpha i3$ Protein Rescue the *Oa1* $-/-$ Mouse Phenotype?, 4/1/08–3/31/10

Hope for Vision: Characterization of Micro RNAs in Embryonic Stem Cell Microvesicles, 1/1/09–12/31/09

Hope for Vision: Characterization of the Interaction between ZBED4, a Novel Retinal Protein and SAFB1, 11/1/09–10/31/11

JoAnn A. Giaconi, MD

Assistant Clinical Professor of Ophthalmology
Member of the Jules Stein Eye Institute

Research Summary

Glaucoma

Dr. Giaconi's research focuses on the treatment of glaucoma and the effects of glaucoma surgery on the cornea and vision, and on intraocular eye pressure. She is currently working on a project examining the over- or under-treatment of glaucoma in the Veteran population. She is also enrolling patients in two clinical studies at the Jules 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 is investigating the post-operative eye pressure course following Ahmed valve implant surgery.

Public Service

Member, Glaucoma Panel, American Academy of Ophthalmology Knowledge Base Development Project
Member, Women in Ophthalmology Board of Directors
Treasurer, Los Angeles Society of Ophthalmology
Member, American Academy of Ophthalmology Liaisons Committee
Volunteer, Eye Care America
Reviewer for a number of ophthalmic journals

Research Grants

American Glaucoma Society: Nutritional Associations with Glaucoma/African American Women, 2/1/06–12/31/10



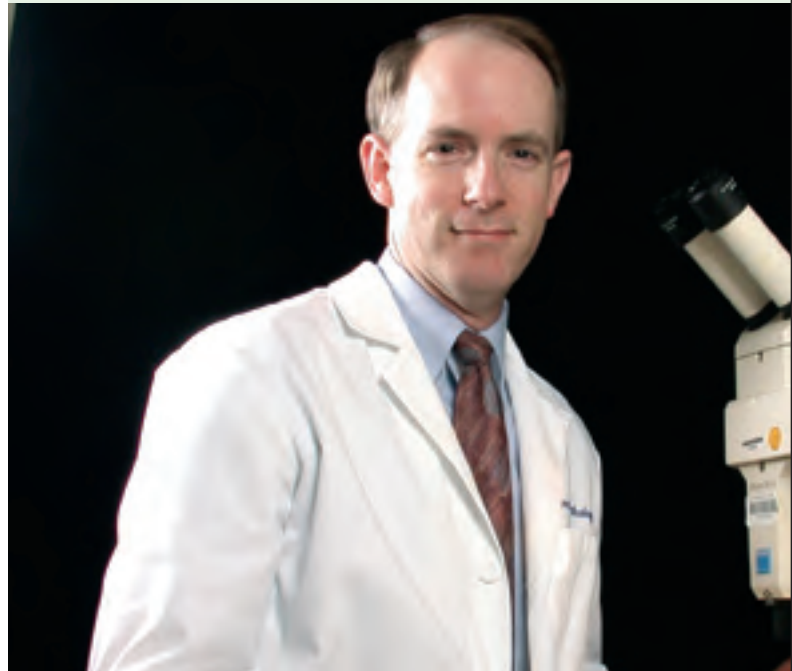
Ben J. Glasgow, MD

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

Research Summary

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.



Public Service

Chair, National Institutes of Health, Anterior Eye Diseases Study Section
Reviewer for many scientific journals

Research Grants

National Eye Institute: Proteins in Molecular Mechanisms of Tear Film Formation, 7/1/06–6/30/11

Robert Alan Goldberg, MD

Karen and Frank Dabby 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 Jules Stein Eye Institute

Research Summary

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 in collaborative research with Raymond Douglas, MD, PhD, and Terry J. Smith, MD, at the University of Michigan. 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 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.

Ongoing research related to the reconstruction of the ocular surface in severe trauma or cicatrizing disease includes the design and evaluation of improved instrumentation and surgery techniques. It is hoped that new treatment approaches can solve problems caused when damaged eyelids, conjunctiva, and support tissues fail to provide a supportive environment for the cornea.



Public Service

Assistant Vice President of Professional Education,
California Academy of Ophthalmology

Fellow and Chair, Awards Committee, American Society of
Ophthalmic Plastic and Reconstructive Surgeons

Fellowship Program Director, American Academy of
Cosmetic Surgery

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

Section Editor, American Academy of Ophthalmology,
O.N.E. Network

Honors

Invited Featured Speaker at the Annual Meeting of the
Iranian Ophthalmology Society in Tehran, Iran

Invited Featured Speaker at Oculoplastics Today in
Tel Aviv, Israel

Host of the Orbit Society Annual Meeting in
Los Angeles, California

Featured Speaker and Moderator at the
Advanced Orbital Symposium in Baltimore, Maryland

Visiting Professor and Featured Speaker at the
Annual Department of Ophthalmology Meeting in
Stanford University in Palo Alto, California

Lynn K. Gordon, MD, PhD

Associate Professor of Ophthalmology

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 Jules Stein Eye Institute

Research Summary

Retinal Cell Biology and Inflammatory Disease

Dr. Gordon's laboratory is involved in two primary areas of research. One project identifies that the cell line ARPE-19 uses the FAK signal transduction pathway to accomplish contraction of collagen gels, an *in vitro* correlate of proliferative vitreoretinopathy (PVR). PVR is observed in up to 10% of individuals following repair of retinal detachments and may lead to recurrent tractional retinal detachment and result in loss of vision. Modulation of gel contraction is accomplished by altering the expression levels of EMP2, and this modulation is mediated through a direct interaction between EMP2 and FAK, resulting in FAK activation. 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*.

The second area of interest of Dr. Gordon's group is the developmental role of programmed death 1 (PD-1), a molecule that is known to play an important role in immune regulation in retinal formation. 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 have recently identified its expression in neuronal cells of the retina. This observation raises the possibility of a developmental role for PD-1 in maturation of the ganglion cell layer and retinal remodeling process as well as a possible role for PD-1 in degenerative neuronal diseases.

Public Service

Member, Dermatologic and Ophthalmic Drugs
Advisory Committee, Federal Drug Administration

Member, Scientific Review Committee, Fight for Sight

Committee Member, American Academy of Ophthalmology,
Basic and Clinical Science Course (BCSC) Section 5, Neuroscience

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

Chair, Neuro-Ophthalmology Research Committee,
North American Neuro-Ophthalmology Society

Councilor, American Academy of Ophthalmology,
Representing Women in Ophthalmology

Research Grants

VA Merit Grant: EMP2, a Molecular Switch for Function of RPE2,
3/5/05–3/31/10

National Eye Institute, Novel Therapies to Prevent Blindness
Caused by Proliferative Vitreoretinopathy, 4/1/10–3/31/14

Pfizer, Inc.: Case-Crossover Study of PDE5 Inhibitor Exposure as a
Potential "Trigger Factor" for Acute Nainon, 6/24/09–6/23/10



Michael B. Gorin, MD, PhD

Harold and Pauline Price Professor of Ophthalmology

Chief of the Division of Retinal Disorders and
Ophthalmic Genetics

Member of the Jules Stein Eye Institute

Research Summary

Hereditary Eye Disorders and Molecular Genetics of Age-Related Maculopathy

Dr. Gorin's primary research focus is in the field of molecular genetics of hereditary eye disorders, specifically in the complex genetics of age-related maculopathy (ARM). His research group was the first to identify specific regions of the genome that contributed to the development of age-related maculopathy in families, leading to the discovery of variations in several genes that contribute to the risk of developing ARM.

Dr. Gorin and other scientific collaborators investigate 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 also pursuing studies to identify genetic variations that contribute to the severity, complications, and therapeutic responses of these conditions.

A major new focus of his laboratory research is the neurobiology of ocular pain and photophobia (sensitivity to light) using a combination of cell biology, behavioral, and molecular genetic methods. The goal of these studies is to understand the basic biology and neural pathways that contribute to photophobia so that new therapeutic strategies can be developed and tested.

Clinical research efforts are also directed towards the development of 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 (such as Plaquenil and tamoxifen).

Applied research interests include bioinformatics in clinical ophthalmic practice and public health issues pertaining to ocular disease.

Public Service

Editorial Board Member, *Current Eye Research*

Member, Association of University Professors of Ophthalmology,
Consortium of Medical Education Directors

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

Scientific Advisory Committee Member: the American
Health Assistance Foundation and the Knights Templar
Eye Research Foundation; Interim Member of the Scientific
Advisory Committee for Research to Prevent Blindness

Founding Member of the VHL (von Hippel Lindau)
Center of Excellence at UCLA Medical Center

Reviewer for many scientific journals

Research Grants

National Eye Institute: Genetics in Age-Related Maculopathy
(received an ARRA Administrative Supplement), 4/1/07–3/31/12

American Health Assistance Foundation: Linkage and
Association Studies for Macular Degeneration, 4/1/06–3/31/10

Foundation Fighting Blindness: Center Grant (Center Director:
Dean Bok, with other investigators), 7/1/05–6/30/10

Daljit S. and Elaine Sarkaria Stargardt Macular Dystrophy
Research Fund: Clinical Studies of Stargardt Disease and
Development of a New Mouse Model of Stargardt Disease
(Principal Investigator: Steven Nusinowitz, PhD, with other
investigators), 7/1/07–6/30/11

Gerald Oppenheimer Family Foundation Center for
the Prevention of Eye Disease: Behavioral and
Molecular Mechanisms of Photophobia, Investigating the
Role of Retinal Ganglion Cells and TPRV1, 1/1/09–12/31/09



David Rex Hamilton, MD, FACS

Associate Professor of Ophthalmology
Director of the UCLA Laser Refractive Center
Member of the Jules Stein Eye Institute

Research Summary

Corneal and Intraocular Refractive Surgery

Dr. Hamilton's research interests are in the areas of corneal biomechanics, screening for corneal ectatic disorders, and refractive surgical techniques to treat patients with complications from previous refractive surgery. He is also interested in the clinical study of intraocular lenses (IOLs) for the treatment of high myopia (Phakic IOLs) and presbyopia (multifocal and accommodating "premium" 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, American Academy of Ophthalmology, Preferred Practice Pattern Committee for Refractive Surgery

Member, American Academy of Ophthalmology, Ophthalmic News and Education Network, Refractive Surgery

Research Grants

Gerald Oppenheimer Family Foundation Center for the Prevention of Eye Disease: Development of Diagnostic Techniques for Detection of Corneal Biomechanical Abnormalities, 1/1/09–12/31/09

Gary N. Holland, MD

Jack H. Skirball Professor of Ocular Inflammatory Diseases

Chief of the Cornea and Uveitis Division

Director of the Ocular Inflammatory Disease Center

Director of the Jules Stein Eye Institute
Clinical Research Center

Member of the Jules Stein Eye Institute

Research Summary

Uveitis and Cornea-External Ocular Diseases

Dr. Holland's research interests involve infectious and inflammatory diseases of the eye. A major focus of current research is ocular toxoplasmosis, the most common retinal infection in the general population. This infection, caused by the parasite *Toxoplasma gondii*, occurs worldwide, and can lead to severe vision loss. Dr. Holland is conducting epidemiological and laboratory investigations in collaboration with investigators at the National Institutes of Health, the US Centers for Disease Control and Prevention, and other universities to understand the sources of infection, course of disease, response to treatment, and disease outcomes. Studies are being conducted to identify host and parasite factors that are related to disease severity. This information may lead to better strategies for treatment of active infections and possibly for prevention of eye involvement altogether.

Since 1981, Dr. Holland has been involved in the study of HIV-related eye disease. Studies are being performed to investigate risk factors for development of cytomegalovirus (CMV) retinitis, a blinding infection among severely immunosuppressed patients. The introduction of potent antiretroviral therapies to treat HIV infections has reduced, but not eliminated, the risk of developing CMV retinitis. Dr. Holland is participating in a large, multicenter study to investigate how the ocular manifestations of HIV disease have changed since the introduction of potent antiretroviral drugs. He is also investigating subtle changes in vision known to occur in HIV-infected individuals. These visual changes may affect an individual's quality of life and may reflect changes in general health.

In conjunction with members of the Department of Pediatrics, Dr. Holland has established a program to provide care for children with uveitis. He is investigating risk factors for development of vision-threatening complications among children with juvenile



rheumatoid arthritis and uveitis. He is studying the most effective techniques for evaluation and treatment of uveitis in children.

Dr. Holland is also investigating corneal infections and treatment of non-infectious uveitis in adults using various immunosuppressive drugs.

Public Service

Associate Editor, *American Journal of Ophthalmology*

Executive Committee Member, American Uveitis Society

Steering Committee Member, Studies of the Ocular Complications of AIDS (SOCA)

Steering Committee Member, Multicenter Uveitis Steroid Treatment (MUST) Trial

Board of Managers, Fellowship Compliance Committee, Association of University Professors of Ophthalmology

International Council Member, International Ocular Inflammation Society

Honors

Recipient of the Jane Wyman Humanitarian Award from the Arthritis Foundation

Research Grants

National Eye Institute/Johns Hopkins University: Studies of the Ocular Complications of AIDS (SOCA), 8/1/05–7/31/10

National Eye Institute: Multicenter Uveitis Steroid Treatment Trial (MUST), 12/1/10–11/30/17

Joseph Horwitz, PhD

Oppenheimer Brothers Professor of Ophthalmology
Distinguished Professor of Ophthalmology
Member of the Jules Stein Eye Institute

Research Summary

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 his laboratory, techniques have been developed for the microdissection of single human cataractous lenses and for separating, with the aid of a microscope, opaque areas and adjacent normal areas. The cataractous and normal lens sections are then studied with the aid of a high-performance liquid chromatography system that separates the chemical substances. This work should provide valuable information about the lens proteins, and contribute directly to understanding the processes involved in the development of cataracts. In addition, Dr. Horwitz is investigating the molecular chaperone properties of the lens' α -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.

Public Service

Ad hoc Member, National Institutes of Health,
Anterior Eye Disease Study Section

Reviewer for many scientific journals

Honors

2010 ARVO Gold Fellow, Association for Research in
Vision and Ophthalmology

Research Grants

National Eye Institute: Alpha-Crystallin & Cataractogenesis
(received an ARRA Administrative Supplement), 8/1/04–7/31/11



Wayne L. Hubbell, PhD

Jules Stein Professor of Ophthalmology
Distinguished Professor of Chemistry and Biochemistry
Co-Chief of the Vision Science Division
Associate Director of the Jules Stein Eye Institute
Member of the Molecular Biology Institute
Member of the Brain Research Institute

Research Summary

Retinal Photoreceptor Membrane Structure and Function

Dr. Hubbell's research is focused on understanding the relationship between the molecular structure of a protein and the conformational changes that control its function. Of particular interest are membrane proteins that behave as "molecular switches," proteins whose structures are switched to an active state by a physical or chemical signal. A primary example under study is light-activated rhodopsin, the visual pigment in photoreceptor cells of the retina. The goal is to elucidate the structure of rhodopsin, the mechanism of the molecular switch, and regulation of this switch by associated proteins, transducin and arrestin. Recently, this research has broadened to include structure/function relationships in water soluble proteins such as the lens protein α -crystallin and the family of retinoid-carrying proteins that transport vitamin A throughout photoreceptor cells.

To investigate these proteins, Dr. Hubbell's laboratory has developed the technique of site-directed spin labeling (SDSL), 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.

Using SDSL, Dr. Hubbell's laboratory, in collaboration with colleagues at the Massachusetts Institute of Technology, has developed a topological map of rhodopsin and followed the detailed structural changes that take place upon activation by a single photon of light. Determining such molecular details is essential to understanding the underlying causes of retinal diseases such as retinitis pigmentosa.

Public Service

Member, National Academy of Sciences
Member, American Academy of Arts and Sciences
Chairman, Advisory Committee of the National Biomedical ESR Center, Medical College of Wisconsin
Member, Advisory Committee of the Center for Very Low Frequency Imaging for In Vivo Physiology, University of Chicago
Member, Advisory Committee for the Advanced ESR Technology Research Center, Cornell University

Honors

Recipient of the 2009 Christian B Anfinsen Award from the Protein Society

Research Grants

National Eye Institute: Molecular Basis of Membrane Excitation, 5/1/05–4/30/15
National Eye Institute: Core Grant for Vision Research at the Jules Stein Eye Institute (received an ARRA Administrative Supplement), 3/1/04–2/28/15



Jean-Pierre Hubschman, MD

Assistant Professor of Ophthalmology
Member of the Jules Stein Eye Institute

Research Summary

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, and improve access to medical care. His recent publications include research papers as well as a book chapter about the feasibility of robotic surgery in ophthalmology.



Public Service

Reviewer for many ophthalmic journals

Research Grants

Ophthotech Corporation: A Phase 1, Single Ascending Dose Trial to Establish the Safety, Tolerability, and Pharmacokinetic Profile of Intravitreal Injections of E10030 in Subjects with Neovascular Age-Related Macular Degeneration, 2/26/08–2/25/10

Ophthotech Corporation: A Phase 1, Ascending Dose and Parallel Group Trial to Establish the Safety, Tolerability, and Pharmacokinetic Profile of Multiple Intravitreal Injections of ARC1905 in Subjects with Neovascular Age-Related Macular Degeneration, 4/29/09–4/29/11

Genentech, Inc.: A Phase III, Multicenter, Randomized, Double-Masked Study Comparing the Efficacy and Safety of 0.5 mg and 2.0 mg of Ranibizumab in Patients with Subfoveal Neovascular Age-Related Macular Degeneration, 10/13/09–3/1/13

Sherwin J. Isenberg, MD

Laraine and David Gerber Professor of
Pediatric Ophthalmology

Professor of Pediatrics

Vice-Chairman of the UCLA Department
of Ophthalmology

Chief of the Ophthalmology Division,
Harbor-UCLA Medical Center, Torrance

Member of the Jules Stein Eye Institute

Research Summary

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: the type and source of bacteria of the external eye; 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 eye drops have been found to treat bacterial conjunctivitis successfully in a three-year, international study with the University of the Philippines. The eye drops 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 eye drops 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, is being conducted 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.

Public Service

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

Honors

CRE Outreach Honoree

Research Grants

Thrasher Research Foundation: A Clinical Trial of
Povidone-Iodine for the Treatment of Fungal Corneal Ulcers,
3/10/08–8/31/09

Gerald Oppenheimer Family Foundation Center for the
Prevention of Eye Disease: Conjunctival Tissue Gas Monitoring
to Prevent Eye Disease in Newborns, 1/1/10–12/31/10

Allan E. Kreiger, MD

Professor of Ophthalmology Emeritus (Active Recall)

Member of the Jules Stein Eye Institute

Research Summary

Retinal Disease and Vitreoretinal Surgery

Dr. Kreiger is interested in the expanding field of vitreoretinal surgery. He has worked to clarify the indications for improved outcomes of operations on complex forms of vitreous and retinal diseases, including diabetic retinopathy, complicated rhegmatogenous retinal detachment, and ocular trauma. He has designed numerous surgical instruments and has developed a wide array of surgical techniques. He is particularly interested in the surgical incisions made in the pars plana during vitrectomy and has reported several basic science and clinical investigations that define normal healing as well as the complications that can occur when healing is abnormal. His most recent work examined the epidemiology of proliferative vitreoretinopathy, the most complex form of retinal detachment. In this work, the risk of visual loss in the fellow eye was surveyed and found to be much higher than previously suspected.

Public Service

Reviewer for many scientific journals



Simon K. Law, MD, PharmD

Associate Clinical Professor of Ophthalmology

Member of the Jules Stein Eye Institute

Research Summary

Optic Disc Evaluation

Dr. Law's principal research interest focuses on the optic disc. He is working to create a computer-based internet-accessible training program for residents, fellows, general ophthalmologists, and optometrists to improve their ability to evaluate and interpret the optic disc. The course will be delivered via an Internet website to reach as many clinicians as possible.

In one study, Dr. Law is evaluating the optic nerve appearance in patients with age-related macular degeneration. The purpose of the study is to characterize the appearance of the optic nerve at different stages of macular degeneration and evaluate for any change in appearance over time corresponding to the progression of macular degeneration. The appearance of the optic nerve will be monitored with photos and imaging studies for two years. Patients with age-related macular degeneration are invited to participate in the research and have their optic nerve evaluated by optic nerve photos and confocal imaging studies.

In other studies, Dr. Law is comparing the results of two commonly used tube shunt devices for glaucoma, the Baerveldt implant and Ahmed glaucoma valve. Patients who require a tube shunt procedure to control glaucoma are randomized to receive either one of the two devices and are followed over a period of five years. He also is evaluating the difference in progression of optic neuropathy, visual field changes, IOP control, and management with a case-controlled comparison between all patients seen in his glaucoma clinic with high myopia and patients with primary open-angle glaucoma.

Public Service

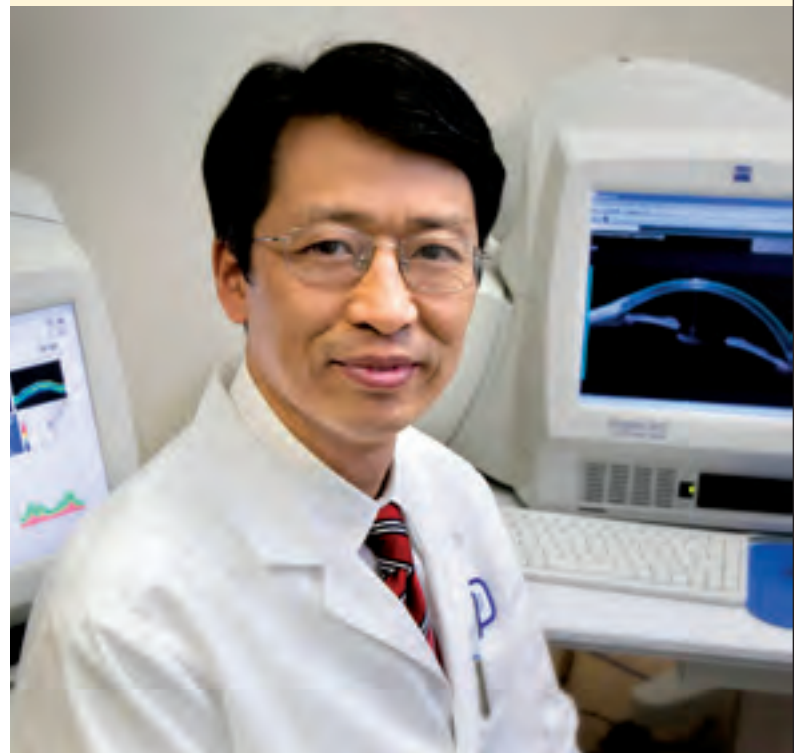
Expert Reviewer, Medical Board of California

Pharmacy Editor, eMedicine online Ophthalmology Journal

Reviewer for many scientific journals

Research Grants

The American Geriatrics Society: Optic Nerve Appearance in Age-Related Macular Degeneration, 7/1/07–6/30/10



Ralph D. Levinson, MD

Associate Clinical Professor of Ophthalmology
Member of the Jules Stein Eye Institute

Research Summary

Ocular Inflammatory Diseases

Dr. Levinson's research interest is ocular inflammatory diseases. He is the primary investigator on international research projects in both the clinical aspects of uveitis and the 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 studying the genetic components of the several forms of ocular inflammation in collaboration with investigators in the United States, France, Mexico, and Japan.



Public Service

Reviewer for many scientific journals
Member, Uveitis Panel, Academy of Ophthalmology
Practicing Ophthalmologists Curriculum

Honors

2009 Achievement Award, American Academy of Ophthalmology
Invited Speaker at the French Academy of Ophthalmology
(la Société Française d'Ophtalmologie) in Paris, France

Research Grants

MacDonald Family Foundation: Studies in Immunogenetics of Ocular Inflammatory Disease, 5/1/02–6/30/10
MacDonald Family Foundation: Immunologic and Clinical Studies of Eye Disease at the Jules Stein Eye Institute, 12/1/08–1/31/11
Allergan Pharmaceutical Corporation: An 8-Week, Phase III, Multicenter, Masked, Randomized Trial, 4/1/06–12/31/09

Colin A. McCannel, MD

Associate Clinical Professor of Ophthalmology
Member of the Jules Stein Eye Institute

Research Summary

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 tracking surgical outcomes to ensure that the new techniques benefit patients. Currently, he is investigating the utility of virtual reality surgery simulation in teaching ophthalmic surgery. He plans to initiate several protocols that assess various aspects of the potential benefit of virtual reality surgical teaching.

Public Service

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

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

Reviewer of the Retina/Vitreous Section of the
Practicing Ophthalmologists Curriculum for the
Maintenance of Certification Exam Study Kit

Volunteer, 2010 Remote Area Medical in
Los Angeles, California

Reviewer for many scientific journals



Tara A. McCannel, MD, PhD

Assistant Professor of Ophthalmology
Director of the Ophthalmic Oncology Center
Member of the Jules Stein Eye Institute

Research Summary

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.

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.



Public Service

Reviewer for many scientific journals

Research Grants

American Association of Cancer Research, Career Development Award for Translational Cancer Research: High Resolution Cytogenetic Study of Archival Metastatic Choroidal Melanoma, 7/1/08–6/30/11

Kevin M. Miller, MD

Kolokotronis Professor of Clinical Ophthalmology
Member of the Jules Stein Eye Institute

Research Summary

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. He performs much of his research in collaboration with Michael D. Olson, OD, PhD, and trainees at UCLA.

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 post-operative 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 described a nonparametric multivariate technique for comparing astigmatism outcomes between treatment groups. He also performs DSEK, LASIK, and other cornea-based laser refractive surgery.

Dr. Miller runs several clinical trials of artificial iris implants designed to treat congenital and acquired aniridia. The multicenter Ophtec 311 clinical trial is investigating a colored iris reconstruction lens. Dr. Miller also obtained an individual device exemption from the FDA to study black Morcher GmbH artificial iris implants. He is beginning to study foldable CustomFlex iris implants from Dr. Schmidt/HumanOptics. All of these devices are showing promising results in patients who suffer from iris defects.



Public Service

Chairman, American Academy of Ophthalmology,
Anterior Segment COMPASS Committee

Member, American Society of Cataract and
Refractive Surgery Cataract Clinical Committee

International Editorial Board, *Oftalmologia Em Foco*

Reviewer for multiple ophthalmic journals

Bartly J. Mondino, MD

Bradley R. Straatsma Professor of Ophthalmology
Chairman of the UCLA Department of Ophthalmology
Director of the Jules Stein Eye Institute
Member of the UCLA Brain Research Institute

Research Summary

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 include corneal dystrophies, peripheral corneal ulcers, bullous diseases of the skin and mucous membranes, collagen shields, and contact lens-related corneal ulcers.



Public Service

Medical Advisory Board Member of Board of Directors,
Braille Institute

Board of Trustees Member, Association of
University Professors of Ophthalmology

Executive Vice-President, Association of
University Professors of Ophthalmology

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

Editor, Association of University Professors of
Ophthalmology, *News & Views*

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

Honors

Recipient of the Visionary Award from the
Foundation Fighting Blindness

Research Grants

Research to Prevent Blindness: Departmental Unrestricted
Grant Award (annual), 2009–2010

Bruce Ford and Anne Smith Bundy Foundation:
Grant Award (annual), 2009–2010

Kouros Nouri-Mahdavi, MD, MSc

Assistant Professor of Ophthalmology
Member of the Jules Stein Eye Institute

Research Summary

Detection of Glaucoma Progression

Dr. Nouri-Mahdavi's research is focused on improving methods to detect early glaucoma and glaucoma progression with perimetry and newer imaging techniques. As part of a team of researchers in the Jules Stein Eye Institute's Glaucoma Division, he is studying a new approach to detect visual field progression in glaucoma. His recent work demonstrated that more frequent visual field testing leads to earlier detection of glaucoma progression. The results of this research are expected to have widespread health policy implications. Dr. Nouri-Mahdavi is also interested in exploring the structure-function relationships in eyes with angle-closure glaucoma compared to those in eyes with primary open-angle glaucoma. A preliminary study enrolling potential candidates for a longer-term investigation is ongoing in the Glaucoma Division. Another area of research and clinical interest is surgical outcomes in glaucoma and newer surgical techniques. Recent work in the Glaucoma Division has shown that outcomes of trabeculectomy after prior clear-cornea phacoemulsification are comparable to those in phakic eyes. Performing cataract surgery before glaucoma surgery in glaucomatous eyes with significant cataracts and in need of better intraocular pressure control is an option that will be more attractive to glaucoma surgeons once the study results are disseminated.

Public Service

Volunteer, 2010 Remote Area Medical in
Los Angeles, California

Contributing Member to the
2010 World Glaucoma Consensus

Editorial Board Member,
Journal of Ophthalmic and Vision Research

Reviewer for a number of ophthalmology journals



Steven Nusinowitz, PhD

Associate Professor of Ophthalmology

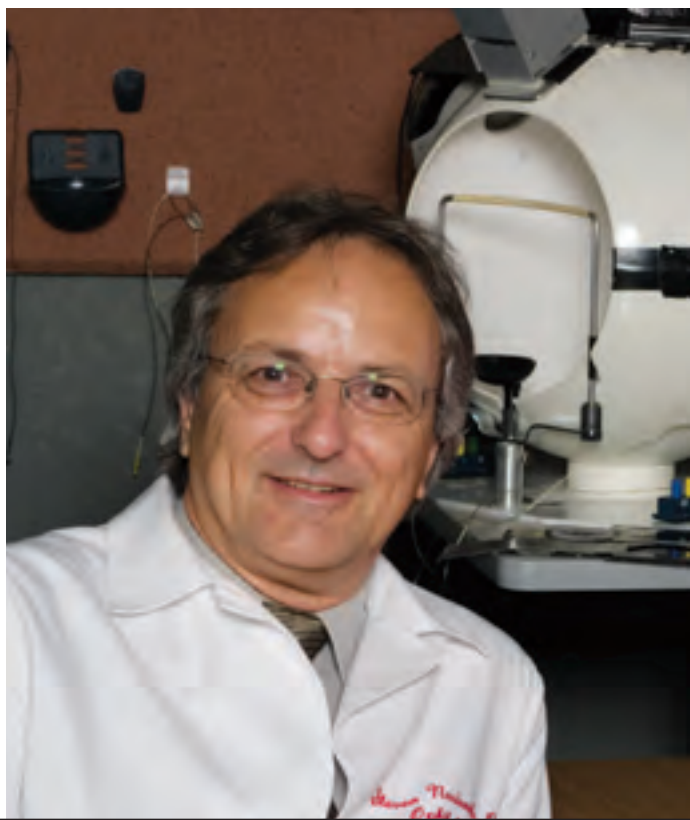
Co-Director of the Visual Physiology Laboratory

Member of the Jules Stein Eye Institute

Research Summary

Mechanisms of Retinal Degeneration

Dr. Nusinowitz's primary research interest is focused on understanding the cellular contributions to non-invasive measures of visual function and defining the sites and mechanisms of disease action in inherited retinal and visual pathway disorders. His main approach to gaining an understanding of the site and underlying mechanism of disease action in humans is to study the patterns of electrophysiological and psychophysical 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 better diagnosis of clinical disease.



Public Service

Editorial Board Service, *Current Eye Research* and *Investigative Ophthalmology and Visual Science*

Reviewer, *Current Eye Research*, *American Journal of Ophthalmology*, *Experimental Eye Research*, *Investigative Ophthalmology and Visual Science*, *Visual Neuroscience*, *Documenta Ophthalmologica*

Grant Reviewer, Foundation Fighting Blindness and Medical Research Council of Canada

Scientific Advisor, Neuroscience Mutagenesis Facility, The Jackson Laboratory; Sytera, Inc.; and SIRION Pharmaceuticals

Director, JSEI Electrophysiology Reading Center

Research Grants

Foundation Fighting Blindness: Center Grant (Center Director: Dean Bok, PhD, with other investigators), 7/1/05–6/30/10

Sirion Therapeutics: A Phase II Study of the Safety and Efficacy of Fenretinide, 9/1/07–8/31/10

Daljit S. and Elaine Sarkaria Stargardt Macular Dystrophy Research Fund: Clinical Studies of Stargardt Disease and Development of a New Mouse Model of Stargardt Disease (Principal Investigator, with other investigators), 7/1/07–6/30/11

Cedars-Sinai Burns & Allen Research Institute/NIH: Ocular SHV: Role of Virus & IL-2 Optic Neuritis, 9/30/06–8/31/11

California Institute for Regenerative Medicine: Development of a Stem Cell-Based Transplantation Strategy for Treating Age-Related Macular Degeneration (Principal Investigator: Gabriel H. Travis, MD, with other investigators), 11/1/09–10/30/12

Natik Piri, PhD

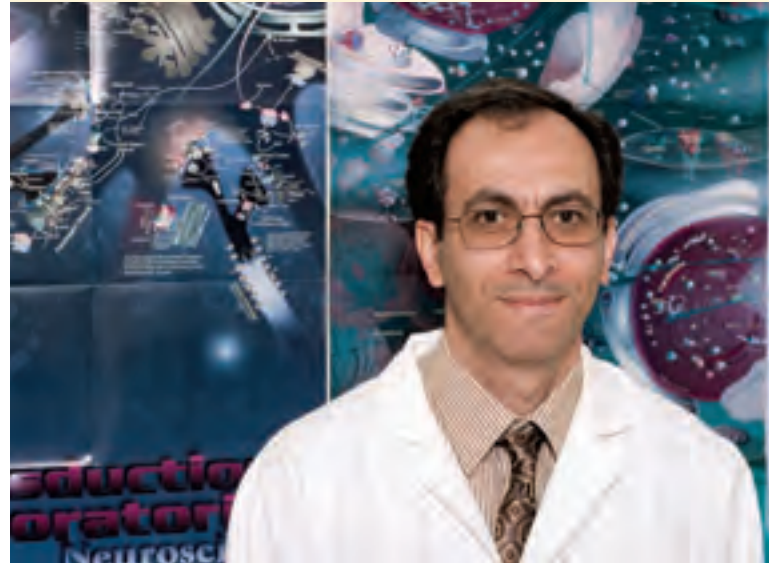
Associate Professor of Ophthalmology
Member of the Jules Stein Eye Institute

Research Summary

Biochemistry and Molecular Biology of Retinal Ganglion Cells; Mechanism of Retinal Ganglion Cell Death in Glaucoma

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. Dr. Piri has initiated a study to identify the genes expressed in RGCs. 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 thioredoxin system, particularly in RGC degeneration in the glaucoma model, and the neuroprotective effects of these proteins against glaucomatous RGC death.



Public Service

Reviewer for many scientific journals

Research Grants

Gerald Oppenheimer Family Foundation Center for the Prevention of Eye Disease: The Retinal Ganglion Cell Protective Role of Alpha Crystallins against Glaucomatous Neurodegeneration, 1/1/09–12/31/09

National Eye Institute: The Neuroprotective Effect of HSP72 Induction in Experimental Glaucoma, 9/30/09–8/31/14

Arthur L. Rosenbaum, MD

Brindell and Milton Gottlieb Professor of
Pediatric Ophthalmology

Chief of the Pediatric Ophthalmology and
Strabismus Division

Vice-Chairman of the UCLA
Department of Ophthalmology

Member of the Jules Stein Eye Institute

Research Summary

Pediatric Ophthalmology, Strabismus, Retinal Disease, and Ophthalmic Surgery

Dr. Rosenbaum's research emphasis was in the field of childhood and adult strabismus (misalignment of the eyes). He was one of the original investigators in the use of botulinum toxin injection into the extraocular muscles for the treatment of strabismus and facial spastic disorders. He was involved in advising new surgical approaches for paralytic strabismus and Duane syndrome, in which specific muscles of the eyes are not functioning normally due to paralysis or innervational disorders. He coauthored a major textbook on strabismus.

Dr. Rosenbaum recently completed studies describing specific eye muscle disorder problems associated with common ophthalmic surgical procedures, such as cataract extraction, glaucoma surgery, and pterygium surgery. He also collaborated on a project to stimulate a paretic eye muscle artificially, using modern bioengineering principles.

Public Service

Vice-President, International Strabismological Association
Board of Directors, Smith-Kettlewell Eye Research Center

Research Grants

Research to Prevent Blindness: Physician-Scientist Award,
1/1/04–12/31/10

*It is with a profound sense of loss that we report that
Dr. Rosenbaum passed away on June 22, 2010.*



David Sarraf, MD

Associate Clinical Professor of Ophthalmology
Member of the Jules Stein Eye Institute

Research Summary

Age-Related Macular Degeneration and Diabetic Retinopathy

Dr. Sarraf's research activities have focused on two major diseases: age-related macular degeneration (ARMD) and diabetic retinopathy. Dr. Sarraf has studied complications of the revolutionary new anti-vascular endothelial growth factor (VEGF) therapies. He determined the incidence of retinal pigment epithelial (RPE) tears associated with intra-ocular anti-VEGF therapy, as well as the imaging (including fluorescein angiography and optical coherence tomography) risk factors for development of this event. His findings have improved the ability of retinologists to predict RPE tears and inform their patients. He recently developed a grading system to more precisely classify and understand this potentially devastating complication.

In a future study, Dr. Sarraf will investigate pigment epithelial detachment (PED) in wet ARMD. The goal is to determine the response to higher dosages of the anti-VEGF agent, Lucentis, and to assess outcomes of PEDs and associated complicating events including RPE tears.

In other research, Dr. Sarraf studied the racial presentation of diabetic retinopathy, and found that the clinical phenotype of diabetic retinopathy differs between the African American and Hispanic populations. He has also identified a new macular condition, referred to as Triamcinolone Associated Maculopathy, which can complicate steroid injections for diabetic macular edema.

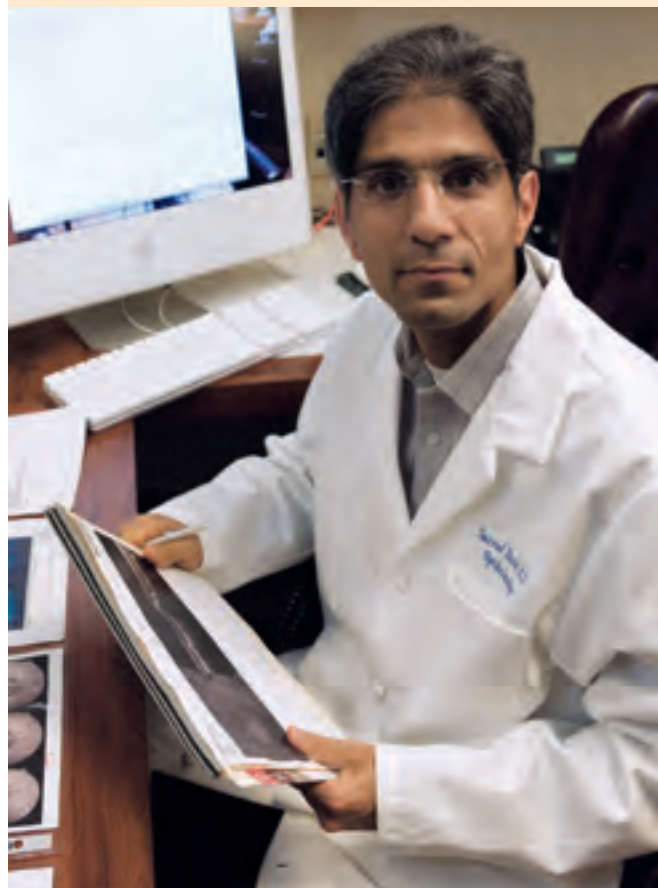
Public Service

Director, Annual Jules Stein Eye Institute and Doheny Eye Institute Comprehensive Ophthalmology Review Course

Director, Lasers in Ophthalmology Course

Co-Director, Los Angeles Imaging Conference for Retinal Specialists

Reviewer for over 20 scientific journals



Steven D. Schwartz, MD

Ahmanson Professor of Ophthalmology

Chief of the Retina Division

Director of the UCLA Diabetic Eye Disease and Retinal Vascular Center

Co-Director of the Macula Center

Associate Professor of Ophthalmology

Member of the Jules Stein Eye Institute

Research Summary

Retinal Diseases

Dr. Schwartz' 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' 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 non-mydriatic 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 Jules Stein Eye Institute for interpretation and follow up.

Public Service

Board Member, American Society of Retinal Specialists

Program Committee Member, Association for Research in Vision and Ophthalmology

Diabetic Eye Disease Screening, Venice Family Clinic

Research Grants

Alcon Research, Ltd.: Post Juxtapapillary Administration of Anecortave Acetate v. Sham Administration in Patients with Exudative AMD, 6/1/04–5/31/10

Allergan Sales, LLC: DEX PS DDS Applicator System in the Treatment of Patients with Diabetic Macular Edema, 8/25/05–12/31/09

Chiltern Int.: TG-MV-006: A Randomized, Placebo-Controlled, Masked, Multicenter Trial of Microplasma Intravitreal Injection for Non-Surgical Treatment of Focal Vitreomacular Adhesion, 3/3/09–9/3/10

Emmes Corp.: Age-Related Eye Disease Study II, 1/1/06–12/31/12

Genentech, Inc.: Ranibizumab Injection, 10/5/07–8/31/12

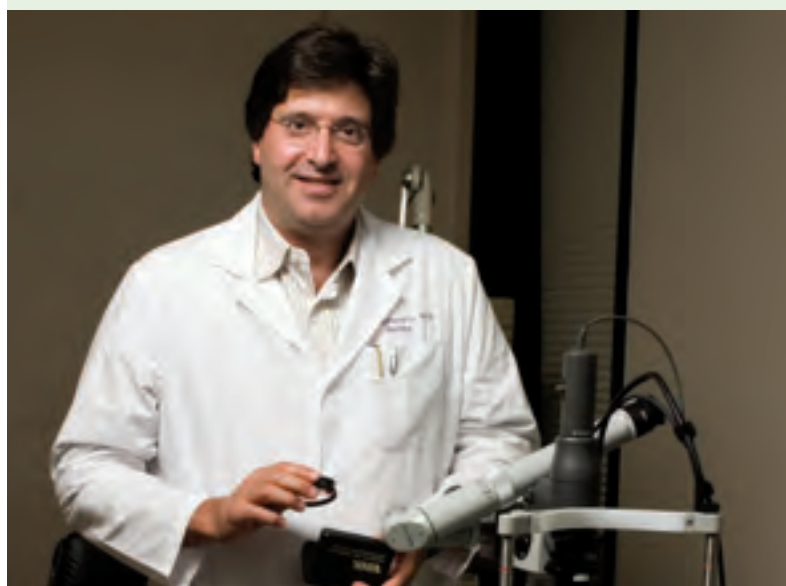
Lowy Medical Research Institute/NEI: Macular Telangiectasia, 9/1/05–8/31/10

NEI/JAEB Center for Health Research: The Diabetic Retinopathy Clinical Research Network, 6/1/03–12/31/09

Gen Vec, Inc.: ADGVPEDF.11.D: Neovascular Age-Related Macular Degeneration, 1/31/03–12/31/09; and GV-000.000: Gene Transfer Product Candidates in Clinical Development, 2/27/09–2/26/24

ThromboGenics, Inc.: Resolution of Vitreomacular Adhesion (VMA) Associated with Neovascular Age-Related Macular Degeneration (AMD) with Intravitreal Microplasma, 6/30/09–6/29/11

Research to Prevent Blindness: Mrs. Merrill Park Award, 6/15/01–12/31/09



Hui Sun, PhD

Associate Professor of Physiology and Ophthalmology
Member of the Jules Stein Eye Institute

Research Summary

Molecular Mechanism of Vitamin A Transport; Etiology of Macular Degeneration

Dr. Sun's laboratory studies mechanisms of macular degeneration and vitamin A transport for vision. Macular degeneration is a leading cause of blindness in the developed world, and vitamin A deficiency is the leading cause of blindness in the third world. 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 and is essential for mobilizing the hepatic vitamin A store. Using a new strategy, Dr. Sun's laboratory identified the long-sought RBP receptor as a multi-transmembrane protein of previously unknown function. It functions simultaneously as a membrane receptor and a membrane transporter that mediates cellular uptake of vitamin A. The RBP/RBP receptor system represents a rare example in eukaryotic cells of a small molecule delivery system that involves an extracellular carrier protein but does not depend on endocytosis. Human genetic studies found that the RBP receptor is essential for the formation of the human eye and many other organs, consistent with the critical role of vitamin A in embryonic development. Dr. Sun's laboratory is developing a variety of techniques to study this membrane transport system essential for human survival. To elucidate the etiology of macular degeneration, his group is studying both the pathogenic and protective mechanisms of this disease. The long-term goal of these studies is to reveal the fundamental causes of the disease so that more effective and efficient therapies can be developed.

Public Service

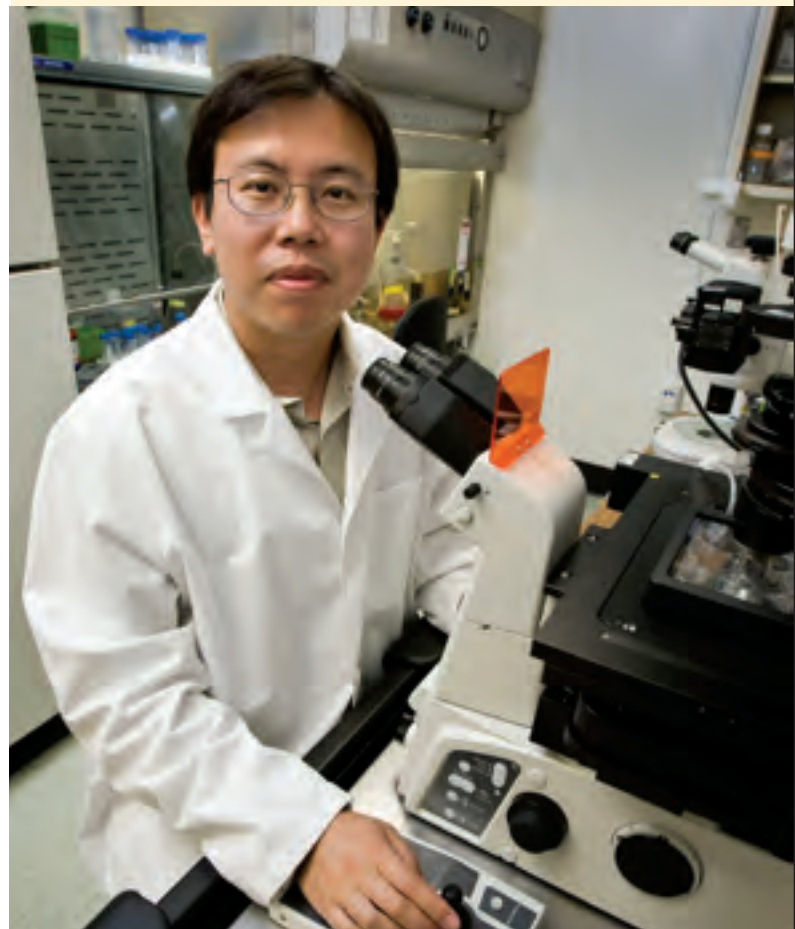
Ad hoc Reviewer, National Science Foundation, National Eye Institute (United States), Health Research Board (Ireland), and Medical Research Council (United Kingdom)
Reviewer for many scientific journals

Honors

Early Career Scientist Award, Howard Hughes Medical Institute

Research Grants

National Eye Institute: Molecular Mechanism of Vitamin A Uptake for Vision, 9/30/07–8/31/12
Howard Hughes Medical Institute, 9/1/09–8/31/15
Ellison Medical Foundation: New Scholar Award, 9/1/06–8/31/10
Foundation Fighting Blindness: Research Grant, 5/1/07–4/30/10



Gabriel H. Travis, MD

Charles Kenneth Feldman Professor of Ophthalmology
Associate Director of the Jules Stein Eye Institute
Co-Chief of the Vision Science Division

Research Summary

Biochemistry of Vertebrate Photoreceptors and Mechanisms of Retinal Degeneration

Dr. Travis's 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's 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's group generated mice with a null mutation in this gene. Biochemical analysis of the phenotype in these *ABCA4* "knockout" 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's 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's 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's 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 (BDPE) Study Section

Reviewer, Howard Hughes Medical Institute (HHMI) investigators

Reviewer for many scientific journals

Honors

2010 ARVO Silver Fellow, Association for Research in Vision and Ophthalmology

Research Grants

California Institute for Regenerative Medicine: Development of a Stem Cell-Based Transplantation Strategy for Treating Age-Related Macular Degeneration (Principal Investigator, with other investigators), 11/1/09–10/30/12

National Eye Institute: The Role of Muller Cells in Visual Pigment Regeneration, 3/1/08–2/28/13

National Eye Institute: Biochemical and Genetic Analysis of the Visual Cycle, 9/9/05–7/31/10

National Eye Institute: Vision Science Training Grant for the Jules Stein Eye Institute (Principal Investigator), 9/30/05–9/29/10

Macula Vision Research Foundation: A2E Accumulation in the Macular Degenerations: Pathogenic Significance & Implications for Treatment, 7/31/07–6/30/10

Foundation Fighting Blindness: Center Grant (Center Director: Dean Bok, PhD, with other investigators), 7/1/05–6/30/10

Barry A. Weissman, OD, PhD

Professor of Ophthalmology

Member of the Jules Stein Eye Institute

Research Summary

Corneal Contact Lenses and Corneal Oxygen Transport

Dr. Weissman continues to study the optics and physiological tolerance of contact lens systems. He has specified a model that predicts optical changes that are induced when a hydrogel (soft) contact lens “wraps” onto a human cornea. This model has shown its applications in lens design. Dr. Weissman investigates the severe complications occasionally encountered with contact lens wear, such as neovascularization, abrasion, and corneal infection. He is interested in systems for oxygen supply to the corneas of contact lens wearers, and in the ability of contact lenses and emerging ophthalmic devices to transmit oxygen. He recently published a model that predicts the tear layer oxygen under different contact lens designs. Keratoconus, a corneal disease treated with contact lenses, is another area of interest. Dr. Weissman was the principal investigator for the UCLA center of the National Eye Institute-sponsored Collaborative Longitudinal Evaluation of Keratoconus (CLEK) study.

Public Service

Board Member and Past-President, Los Angeles County Optometric Society

Board of Trustees Member, California Optometric Association



David S. Williams, PhD

Jules and Doris Stein Research to Prevent Blindness Professor
of Ophthalmology

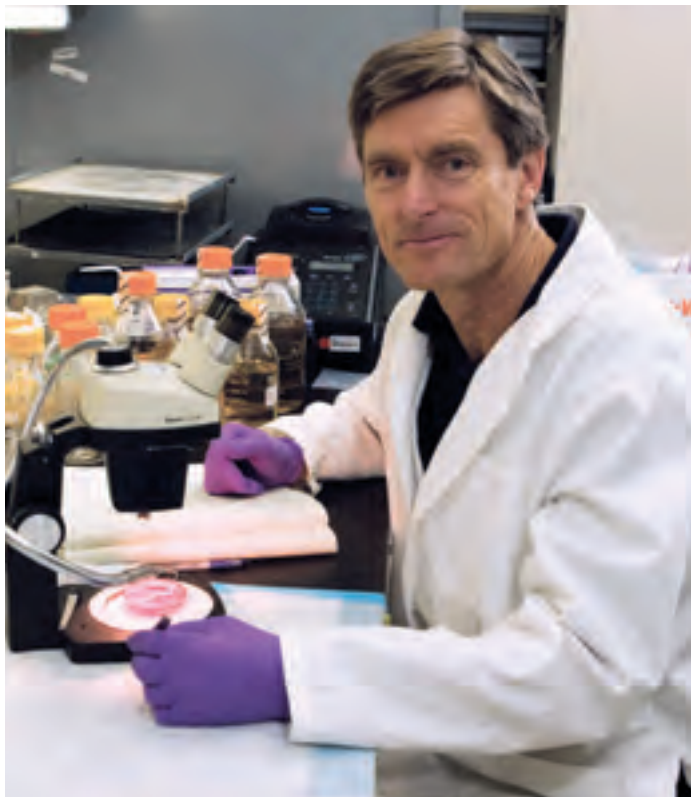
Professor of Neurobiology

Member of the Jules Stein Eye Institute

Research Summary

Cell Biology of the Retina and Inherited Retinal Disease

Dr. Williams's laboratory focuses on the cell biology of photoreceptor and retinal pigment epithelium cells. His group is especially interested in the proteins that underlie Usher syndrome, and one area of his research involves gene therapy experiments aimed at preventing the blindness that ensues from Usher syndrome type 1B. Past studies have elucidated transport roles for the Usher 1B protein, myosin VIIa, in the retina. Preclinical studies on a virus-based approach for gene therapy of Usher 1B are being carried out. In more basic studies, his laboratory is investigating how proteins and organelles are moved around within the photoreceptor and RPE cells.



Public Service

Retinal Physiology and Pathology Study Section Member,
National Institutes of Health

Scientific Advisory Board Member,
Foundation Fighting Blindness

Executive Board Member, Sustainability Council of
New Zealand

Committee Member, ARVO/International Society for
Ocular Cell Biology

Associate Editor, *Visual Neuroscience*

Honors

Jules and Doris Stein Research to Prevent Blindness Professorship

Research Grants

National Eye Institute: Retinal Cell Biology of
Usher 1 Proteins, 12/1/07–11/30/09

National Eye Institute: Retinal Cell Biology of Myosin VIIA,
7/1/09–6/30/14

National Eye Institute, ARRA Administrative Supplement:
Kinesin in Photoreceptor Cells, 9/30/09–9/29/10

National Neurovision Research Institute, Foundation
Fighting Blindness: Wynn-Gund Translational Research
Acceleration Program Award: MY07A Gene Therapy for
Usher 1B, 7/1/08–6/30/13

California Institute for Regenerative Medicine: Development
of a Stem Cell-Based Transplantation Strategy for Treating
Age-Related Macular Degeneration (Principal Investigator:
Gabriel H. Travis, MD, with other investigators), 11/1/09–10/30/12

Xian-Jie Yang, PhD

Professor of Ophthalmology

Member of the Jules Stein Eye Institute

Research Summary

Development and Disease Therapy of the Retina

Dr. Yang is interested in the molecular and cellular mechanisms underlying retinal development and disease. Her research efforts are directed toward understanding how retinal progenitor (precursor) cells become different types of mature retinal neurons during formation of the retina. To achieve these goals, her laboratory uses a variety of molecular and cellular approaches to study genes involved in cell-to-cell communication and neuronal differentiation. As an important research tool, Dr. Yang utilizes special laboratory-based viruses to mediate gene transfer and advanced transgenic technologies. In addition, Dr. Yang's laboratory is developing stem cell based cell therapy for a variety of retinal degenerative diseases. Her research will enhance researchers' capabilities to manipulate retinal progenitor and stem cells, thereby contributing to the effort to combat retinal degenerative diseases.

Public Service

Ad hoc Reviewer, Foundation Fighting Blindness; National Science Foundation, Developmental System Cluster and Neural Systems; and National Institutes of Health, Biology and Disease of Posterior Eye Study Section

External Grant Reviewer, Medical Research Council and Wellcome Trust in the United Kingdom; The Research Grant Council of Hong Kong in China; and Israel Science Foundation

Editorial Board Member, *Visual Neuroscience*

Ad hoc Academic Editor, *PLoS Biology*

Reviewer for many scientific journals

Research Grants

National Eye Institute: Hedgehog Signaling in Photoreceptor Differentiation and Maintenance, 12/1/09–11/30/13

National Eye Institute: Cytokine Signal Transduction in Retinal Development, 9/30/05–7/31/10

California Institute for Regenerative Medicine: Development of a Stem Cell-Based Transplantation Strategy for Treating Age-Related Macular Degeneration (Principal Investigator: Gabriel H. Travis, MD, with other investigators), 11/1/09–10/30/12



INSTITUTE MEMBERS BASED AT OTHER SITES

James W. Bisley, PhD

Assistant Professor of Neurobiology and Psychology

Member of the Jules Stein Eye Institute

Member of the Brain Research Institute

Research Summary

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.

Nicholas C. Brecha, PhD

Professor of Neurobiology and Medicine

Vice Chair of the Department of Neurobiology

Member of the Jules Stein Eye Institute

Member of the Brain Research Institute

Member of CURE: Center for Digestive Diseases

Research Summary

Functional and Structural Organization of the Mammalian Retina

Dr. Brecha's research focuses on the elucidation of the structural organization of the outer and inner retina for understanding visual information processing by the retina. Morphological studies have defined cell types and classes and microcircuitry organization in the retina, and neurochemical studies have investigated the modulatory action of neurotransmitters and neuroactive peptides. Experimental work has clarified the functional role of neuropeptides in the inner retina, and supports the current hypothesis that certain neuropeptides are modulators of retinal neurons and circuitry that influence light and dark adaptation; they also influence retinal circuitry that mediates form vision. 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 critically important for visual processing. Experimental studies are testing the idea that a vesicular mechanism underlies

transmitter release from horizontal cells in this triad to mediate feedback and feed forward signaling. These investigations are fundamental steps in establishing the retina's functional organization and provide the basis for understanding the pathophysiology of retinal dysfunction.

Antoni Ribas, MD

Associate Professor of Hematology and Oncology

Member of the Jules Stein Eye Institute

Research Summary

The Immune System in the Treatment of Cancer

Dr. Antoni Ribas' research is aimed at understanding how the immune system can be effectively used to treat cancer. His work is focused on the ability to activate killer immune lymphocytes specifically targeted to the cancer. A specialized white blood cell, the dendritic cell, can be grown in the laboratory and used to activate tumor-specific lymphocytes. Dr. Ribas and his colleagues have conducted studies demonstrating that dendritic cells could be genetically engineered to induce powerful responses against cancer, and have extended this approach from preclinical studies in the laboratory and in mice to the treatment of patients with malignant melanoma and hepatocellular carcinoma. Additional interests of the laboratory are the use of interventions that modify the regulation of tumor-specific lymphocytes and the modulation of the interaction of the killer immune cells with the cancer cells, with the goal of further increasing their antitumor potential.

Dario L. Ringach, PhD

Professor of Neurobiology and Psychology,
Biomedical Engineering Program

Member of the Jules Stein Eye Institute

Research Summary

Visual Perception, Eye Movement, and Sensorimotor Integration

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. Using virtual reality

environments, he and his colleagues are studying how human subjects interact with visual stimuli that can be controlled in real time depending on the individual's eye, head, and limb movements. They are examining how visual feedback is used to guide motor actions as well as how the brain adapts to novel situations, such as simulated increases in the total feedback delay.

Guido A. Zampighi, PhD

Professor of Neurobiology

Member of the Jules Stein Eye Institute

Research Summary

Intercellular Junctions and Communication

A fundamental property of cells organized in tissues is their ability to communicate with each other via highly specialized areas of plasma membrane contact called junctions. Dr. Zampighi is studying the gap junction and the chemical synapse, two specialized junctions that mediate electrical and chemical transmission, respectively. The gap junction is composed of specialized channels containing small hydrophilic pores that span the two plasma membranes and the intervening extracellular space (the cell-to-cell channel). He is investigating the high-resolution structure of the channels as well as the mechanisms of assembly, insertion, and retrieval of the connexin proteins which form them. The chemical synapse is composed of a presynaptic neuron filled with small diameter vesicles that contain high concentration of neurotransmitters and a postsynaptic neuron with receptors. He is studying the mechanisms by which the synaptic vesicles attach ("dock") to the presynaptic membrane. He uses structural (electron microscopy), biochemical, and electrophysiological techniques in an attempt to identify, purify, and characterize the channels and transporters of both junctions in an effort to increase understanding of the mechanisms mediating cell communication.

Novrouz Akhmedov, PhD

Associate Research Ophthalmologist

Research Summary

Molecular Biology of the Retina

Dr. Akhmedov's primary research objective is to determine the function of a novel protein, 7R, in the retina. He has found that mutations in 7R's sequence cause severe autosomal recessive retinitis pigmentosa. In addition to the biochemical and molecular characterization of 7R, Dr. Akhmedov is attempting to identify the pathways that regulate 7R's action and the proteins with which it interacts. His most striking challenge is to understand how 7R is selectively transported from the ER/Golgi to the outer segments of cones and how it gets integrated into their membranes.

Christian Altenbach, PhD

Research Ophthalmologist

Research Summary

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 (SDSL) and electron paramagnetic resonance spectroscopy (EPR) to study the structure of rhodopsin in the absence of light, as well as the changes in structure caused by light.

Barry L. Burgess, BS

Research Specialist IV

Research Summary

Ocular Melanoma Molecular Genetics

Mr. Burgess provides research support for the Ophthalmic Oncology Center under the direction of Tara A. McCannel, MD, PhD. His research interests include investigation of cytogenetic abnormalities of ocular melanoma and gene discovery for the metastatic form of this cancer. He has developed highly characterized cell lines from both primary ocular melanomas and metastatic lesions to complement the Center's study of biopsy material. His research goals are to identify biochemical pathways that lead to a metastatic outcome and to find targets for therapeutic intervention that may preempt the progression of metastatic disease.

Qingling Huang, MD

Assistant Research Ophthalmologist

Research Summary

Structure and Function of Alpha-Crystallin

Dr. Huang's research is focused on understanding the function and structure of alpha-crystallin. Alpha-crystallin is one of the major structure proteins of the eye lens. This protein is a member of the small heat-shock proteins and is capable of protecting other proteins from denaturation and aggregations. This protein is very important because it is over-expressed in many neurological diseases.

Jacky M.K. Kwong, PhD

Assistant Research Ophthalmologist

Research Summary

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, he focuses on the response and the cell death pathway of retinal ganglion cells in animal models of optic nerve injury and glaucoma. Dr. Kwong and his colleagues recently found retinal ganglion cell-specific proteins. He is utilizing these proteins to visualize retinal ganglion cells and is investigating their function during degeneration. He is also applying pharmacologic techniques to evaluate therapies that enhance endogenous neuro-protective responses against glaucomatous, excitotoxic, and axonal damage to nerve cells, and utilizing multi-disciplinary methods to understand the protective mechanisms.

Anna Matynia, PhD

Assistant Research Ophthalmologist

Research Summary

Neural and Molecular Basis of Light-Associated Allodynia

Dr. Matynia is investigating the mechanisms of light-associated allodynia (LAA), a condition in which normal levels of light produce ocular pain. Using a combination of behavioral, molecular, and cellular approaches in genetic mouse models, the goal is to identify the site of light-pain association and determine how and where the pain signal is propagated. The research findings will form the basis of treatment strategies for this condition.

Michael D. Olson, OD, PhD

Associate Research Ophthalmologist

Research Summary

Comprehensive Ophthalmology

Dr. Olson's research activities focus on the visual and surgical outcomes following cataract surgery and the surgical correction of refractive errors. He is investigating the Ophtec Reconstruction Lens for the treatment of partial or complete aniridia. With Kevin M. Miller, MD, he obtained a humanitarian device exemption from the U.S. Food and Drug Administration (FDA) for Morcher GmbH aniridia implants to treat eyes with congenital and acquired iris defects. A new study investigates an eloquent iris implant that accurately matches the iris color of the fellow eye.

Maria Carolina Ortube, MD

Assistant Research Ophthalmologist

Clinical Director of Research Studies,
Retinal Disorders & Ophthalmic Genetics Division

Research Summary

Ocular Genetics

Dr. Ortube is a specialist in pediatric ophthalmology, strabismus, and pediatric genetic conditions. She is an investigator in four clinical and translational research projects related to ocular genetics. The Genetics of Age-Related Maculopathy (GARM) study focuses on the genetic and environmental risks that contribute to age-related maculopathy (ARM). The genetics of inherited eye disorders and Stargardt protocols provide clinical characterization of affected individuals and at-risk family members. The protocols use state-of-the-art imaging and functional technologies in conjunction with molecular genetic testing to identify causative genes and mutations. She has a special interest in children born with congenital ocular disorders. Dr. Ortube is also investigating a simple, noninvasive, rapid method for widespread screening of diabetics in order to identify those who may require medical attention and/or therapy for diabetic retinopathy.

Roxana A. Radu, MD

Associate Research Ophthalmologist

Research Summary

Retinoids Metabolism in the Eye and Underlying Mechanisms of Macular Degeneration

Dr. Radu's research focuses on the visual cycle and underlying biochemical and molecular mechanisms of macular degeneration. She studies the *in vivo* association of the complement negative regulator genes and age-related macular degeneration (AMD) development. The mechanism by which dysfunction of complement factor H (CFH, one of the complement regulatory genes) causes AMD is not known. To investigate the relationship between abnormal build-up of vitamin A-based toxic compounds such as A2E and the complement system, Dr. Radu will generate a mouse lacking both genes ABCA4 and CFH. This complex mouse genetic model will advance understanding of the relationship between lipofuscin accumulation, complement activation, and photoreceptor degeneration in AMD, and will be a valuable tool for developing new treatments for this disease.

Kiyo Sakagami, PhD

Assistant Research Ophthalmologist

Research Summary

Hedgehog Signaling and PTEN/PI3K Signaling on Retinal Development

Dr. Sakagami's research aims to understand how extracellular signals coordinate retinal cell fate and behavior during development, using genetic strategies for conditional mutagenesis in the mouse. The more specific goals of her research are to understand how Hedgehog signaling regulates bHLH genes to determine cell cycle and cell fate decisions, and to investigate the potential role of PTEN/PI3K signaling on retinal network formation.

Ned Van Eps, PhD

Assistant Research Ophthalmologist

Research Summary

The Molecular Mechanism of Transducin Activation

The conversion of light energy into rod cell impulse responses requires signal transfer between a photoreceptor, rhodopsin, and a rod cell protein called transducin. Dr. Van Eps is studying the structural changes in transducin that are necessary for signal relay between the two proteins. The techniques of site-directed spin labeling (SDSL) and electron paramagnetic resonance (EPR) are used to follow transducin conformational changes that are important for its function and catalytic cycle.

Quan Yuan, PhD

Assistant Research Ophthalmologist

Research Summary

Biochemistry of Visual Cycle and Retinal Degeneration

Dr. Yuan's research focuses on the biochemical mechanism of key proteins involved in the retinoid visual cycle. Retinal Pigment Epithelium Specific Protein 65kD (Rpe65) is one of the most important enzymes in the visual cycle that converts *all-trans* retinyl ester to 11 *cis*-retinol and regenerates the visual pigment. He has investigated the biochemistry behind the interaction of Rpe65 with ER membrane and resolved the puzzle of Rpe65 membrane association. He is also investigating the chemical mechanism that regulates Rpe65 enzymatic activity, using chemical and state-of-the-art instrumental approaches. In other studies, Dr. Yuan and his colleagues are identifying candidate enzymes involved in the putative secondary isomerase pathway in cone dominant species. Another research interest is elucidating the biochemistry of *ABCA4* protein in Stargardt disease and age-related macular degeneration (AMD).

John D. Bartlett, MD

Assistant Clinical Professor of Ophthalmology

Research Summary

Cataract Surgery

Dr. Bartlett provides clinical supervision to resident physicians at the University Ophthalmology Associates and teaches medical students during their ophthalmology surgical sub-specialties clinical rotation. He also is responsible for the continued development of the resident cataract surgery educational curriculum.

Laura Bonelli, MD

Clinical Instructor of Ophthalmology

Research Summary

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 sub-specialties 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.

Melissa W. Chun, OD

Associate Clinical Professor of Ophthalmology

Director of the UCLA Vision Rehabilitation Center

Research Summary

Vision Rehabilitation

Dr. Chun's research interest is in the area of vision rehabilitation for patients with low vision. She is currently conducting research on the effect of internet access training on the quality of life of patients with age-related macular degeneration. She is also participating in a multicenter pilot study to evaluate the effectiveness of visual rehabilitation services and how to improve methods of vision rehabilitation care.

Ronald Mancini, MD

Associate Physician Diplomate

Research Summary

Orbital Diseases and Ophthalmic Plastic Surgery

Dr. Mancini's research interests include fat transfer and grafting techniques for which he is funded by the Cosmetic Surgery Foundation, small incision and minimally invasive facial surgical techniques, and face lift surgery techniques.

Susan S. Ransome, MD

Clinical Instructor of Ophthalmology

Research Summary

Cytomegalovirus (CMV) Retinitis

Dr. Ransome is participating in several clinical research studies involving HIV-infected patients, some of whom have AIDS and cytomegalovirus (CMV) retinitis. In one study, investigators are following patients over time to see what types of eye problems develop in HIV-infected individuals in the era of potent anti-retroviral therapies.

Meryl L. Shapiro-Tuchin, MD

Assistant Clinical Professor of Ophthalmology

Director of the Ophthalmology
Inpatient Consultation Service

Research Summary

Comprehensive Ophthalmology

Dr. Shapiro-Tuchin provides clinical supervision to resident physicians while they are attending patients at University Ophthalmology Associates clinics. She also functions as Director of the Ophthalmology Inpatient Consultation Service, assisting resident physicians in their evaluation of inpatients admitted to the David Geffen School of Medicine at UCLA. She provides clinical instruction to medical students during their rotation in Ophthalmology.

Federico G. Velez, MD

Assistant Clinical Professor of Ophthalmology

Research Summary

New Approaches to Strabismus

As part of a multidisciplinary team of researchers, Dr. Velez is studying the mechanisms of congenital and acquired forms of strabismus and is involved in the development of new surgical approaches for the treatment of complicated forms of ocular motor deficiencies. 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. He recently received a grant from the Gerald Oppenheimer Family Foundation Center for the Prevention of Eye Disease to develop an electrical-stimulation device to prevent strabismic amblyopia.

EMERITUS FACULTY

Leonard Apt, MD

Professor of Ophthalmology Emeritus (Active Recall)

Founding Chief of the Division of
Pediatric Ophthalmology and Strabismus

Member of the Jules Stein Eye Institute

Michael O. Hall, PhD

Professor of Ophthalmology Emeritus (Active Recall)

Founding Member of the Jules Stein Eye Institute

Robert S. Hepler, MD

Professor of Ophthalmology Emeritus (Active Recall)

Founding Chief of the Neuro-Ophthalmology Division

Member of the Jules Stein Eye Institute

Bradley R. Straatsma, MD, JD

Professor of Ophthalmology Emeritus (Active Recall)

Founding Chairman of the
Department of Ophthalmology

Founding Director of the Jules Stein Eye Institute

Marc O. Yoshizumi, MD

Professor of Ophthalmology Emeritus

Member of the Jules Stein Eye Institute

Richard W. Young, PhD

Professor of Neurobiology Emeritus

Member of the Jules Stein Eye Institute

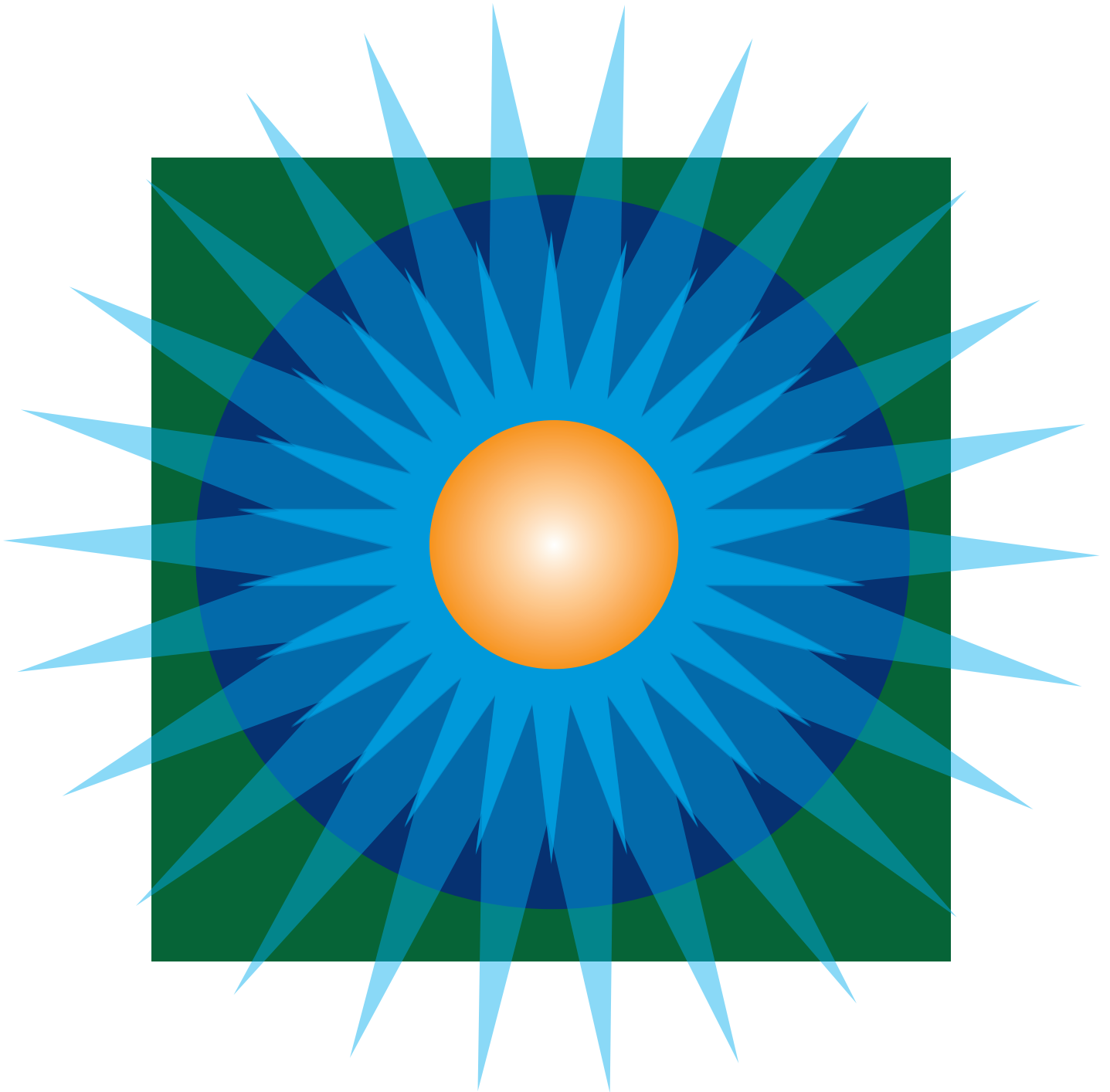
LECTURER

Kathleen L. Boldy, V. MD

Lecturer in Ophthalmology



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. Institute ophthalmologists are supported by optometrists, orthoptists, technicians, and nurses. Care is delivered in distinctive subspecialty treatment centers, service areas, and clinical laboratories, as well as in specially equipped ophthalmic surgical suites and a dedicated inpatient unit.

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.

University Ophthalmology Associates

Comprehensive and subspecialty eye care in all medical and surgical areas of ophthalmology is offered through University Ophthalmology Associates.

Dr. John D. Bartlett is Medical Director and ophthalmologists who are members of the UCLA Medical Group staff the practice.

Inpatient Services

The Ophthalmology Inpatient Consultation Service, operating 24 hours a day through the Ronald Reagan UCLA Medical Center, provides consultation and treatment to pediatric and adult patients admitted to the hospital's medical and surgical inpatient services. Led by **Dr. Meryl L. Shapiro-Tuchin**, the consultation team consists of physician-residents. Subspecialty coverage from faculty is provided as needed.

Surgical Services

Ophthalmic surgery of all types, 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 pre- and post-operative care.

UCLA Mobile Eye Clinic

The UCLA Mobile Eye Clinic, a 39-foot-long bus specially outfitted with eye examination equipment, is supported by charitable contributions to the Jules Stein Eye Institute. The Mobile Eye Clinic's staff of trained ophthalmic personnel, led by **Dr. Anne L. Coleman**, provides general eye care to over 4,000 underserved adults and children annually throughout Southern California. Services include 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.

Summary of Patient Care Statistics

	2008–2009	2009–2010
Faculty Consultation Service		
Patient visits	63,711	65,910
University Ophthalmology Associates		
Patient visits	17,683	19,336
Inpatient Consultation Service		
Patient evaluations	262	348
Clinical Laboratories		
Procedures	27,372	26,823
Surgery Services		
Number of procedures	8,950	9,429
Mobile Eye Clinic		
Number of patients seen	4,089	4,131
Ocular abnormalities	45%	46%
Number of trips	191	181

Research and Treatment Centers

The Ophthalmology 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 Jules 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. 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, sclerotherapy, and dermal filler and other cosmetic injections to smooth facial lines. Minimal incision approaches are utilized to provide the optimal aesthetic result. A major goal of the Center is to conduct research focused on improving understanding of skin processes, such as aging and healing, and on developing new techniques and substances for aesthetic surgery. Center physicians have pioneered surgical techniques to enhance the normal function and appearance of the eyes and face, and often receive referrals for complex plastic surgery cases.

UCLA Center for Eye Epidemiology

The UCLA Center for Eye Epidemiology, under the direction of **Dr. Anne L. Coleman**, was established in 1998 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.

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. Leonard Apt** (co-director), **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 a very inexpensive antiseptic solution to treat pediatric corneal infections in underdeveloped areas, and completed a study showing its effectiveness in treating corneal ulcers that now blind more than 400,000 children worldwide. A second study is underway to evaluate the solution's effectiveness in treating fungal infections, a major cause of pediatric blindness in tropical countries.

Clinical Research Center

The Clinical Research Center functions under the direction of **Dr. Gary N. Holland**, with co-directors **Drs. Joseph Caprioli, Michael B. Gorin, Ralph D. Levinson**, and **Steven D. Schwartz**. Established in 1998, the Center provides core support to faculty members conducting patient-based research studies. This support involves vital, behind-the-scenes activities that facilitate the clinical research process. Center staff members liaise with grant 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.

Institute faculty members are currently conducting approximately 70 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 direction of **Dr. Barry A. Weissman**, was created through a reorganization of the contact lens service in 2002 to provide patients with an expanded treatment program and facilities. The Center serves patients with all ophthalmic diagnoses that can be treated with contact lenses, including nearsightedness and farsightedness, regular and irregular astigmatism, and presbyopia. The Center also treats patients who have had eye diseases that are only optically or therapeutically approached with contact lenses (e.g., aphakia, keratoconus, post-corneal transplants, corneal trauma, and infection).

The Center is one of several across the nation that participated in the landmark CLEK (Collaborative Longitudinal Evaluation of Keratoconus) Study sponsored by the National Eye Institute. Other research conducted by faculty at the Center includes contact lens wear complications, such as neovascularization, abrasion and corneal infection; and systems of oxygen supply to the corneas of contact lens wearers.

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 will expand the standard of treatment, such as new lasers and laser strategies, refinement of microsurgical techniques specific to diabetic eye diseases, and non-traditional 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 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. Primary surgical repairs are performed immediately for new trauma while secondary repairs are usually scheduled.

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 latter includes lifestyle modification, nutrition, vitamins, herbs, acupuncture, and massage.

The Gerald Oppenheimer Family Foundation Center for the Prevention of Eye Disease also directs funding to support the Institute's Indigent Children and Families Ophthalmic Care Program, which provides much-needed ophthalmic medical care to economically disadvantaged children and adults.

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 (AK); conductive keratoplasty (CK), and intracorneal ring (INTACS) 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.

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 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 their cases 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 receive an immediate angiogram to identify lesions. Treatment options for wet macular disease include participation in emerging therapies and 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 provide patients with coordinated multi-specialty care for a broad spectrum of inflammatory eye disorders including uveitis, corneal ulcers, endophthalmitis, autoimmune diseases of the cornea and ocular surface, and ophthalmic manifestations of AIDS. The Center has a long history of participating in clinical studies and drug therapy investigations that have furthered the understanding and treatment of these diseases.

Center faculty members were the first to describe cytomegalovirus (CMV) retinitis as an ophthalmic manifestation of AIDS; today the Center is a nationally recognized site of expertise for AIDS-related ophthalmic disease. Another area of focus is the research and treatment of uveitis. The Center offers a Corneal Ulcer Service and an HIV Ocular Disease Service to facilitate the integration of care with other medical specialties. If indicated, diagnostic testing ranging from cultures to biopsies to special ultrasound biomicroscopic examinations; complex medical treatments including immunosuppression and investigational drugs; and surgical intervention such as corneal, glaucoma, and retinovitreal procedures are available.



Ophthalmology Treatment Centers provide patients and doctors with expert diagnostic, consultation, and treatment services.

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 (COMS) 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, neuroradiologists, 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 **Dr. 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, 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; however, surgery is the primary treatment approach. The team performs procedures in the Institute's modern operating rooms that are not usually available in the community, including orbital decompression microsurgery for orbital apical tumors, optic canal decompression, and bony reconstruction to address traumatic or congenital defects. The Center has an active program on Graves disease. New surgical techniques are evaluated for Graves patients and basic science research is carried out to advance understanding about the disease.

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.

Vision Rehabilitation Center

The Vision Rehabilitation Center is under the direction of **Dr. Melissa W. Chun**, with **Dr. Steven D. Schwartz** as Medical Advisor. The Center 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.

The Center provides assistance in the form of patient education and training, including reading and computer training, as well as consultation on a wide array of technologically advanced devices that can help patients adapt to their visual restrictions. Customized for each patient's individual needs, Center services may include instruction on simple techniques that optimize lighting and contrast or on sophisticated devices like a computer system that scans written materials and reads it back in a synthesized voice. One unique feature of the Center is a special "lending library" of low vision devices that enables patients to try them at home or in the office prior to purchase.

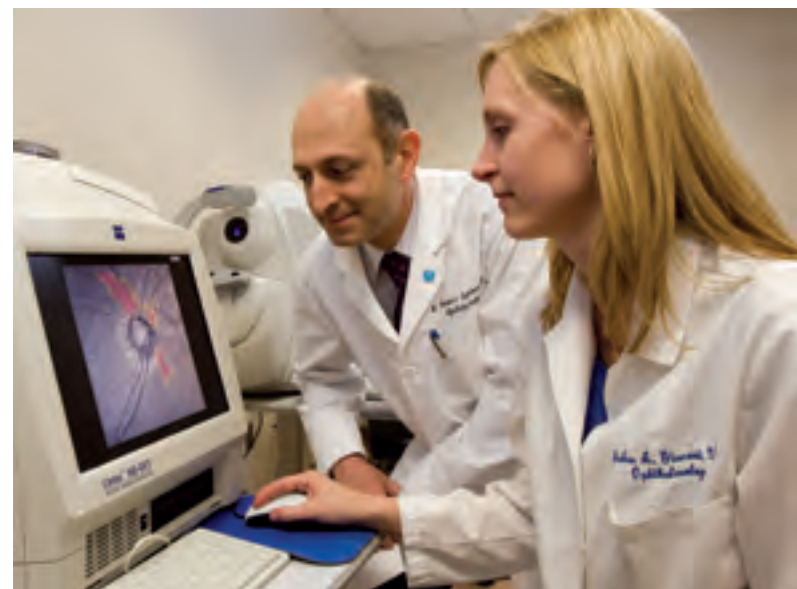
Clinical Laboratories enhance patient care by providing precise measurements, photographs, and quantitative studies of the eye and the visual system.

Clinical Laboratories

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 NIDEK EC-9000 and Bausch and Lomb Orbscan topographers, and imaging of the corneal endothelium for assessment of corneal endothelial cell morphology and density using the KONAN non-contact specular microscope. Full-thickness confocal microscopic imaging of the cornea, a very useful tool in the diagnosis of suspected fungal, acanthamoebic and other parasitic infections of the cornea, is performed with the HRT3 confocal microscope. This instrument 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 glaucoma patients to assist the ophthalmologist in the management of patients with this disease. 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 (HRT), using confocal laser light, measures additional parameters of the optic nerve and provides more information on the nerve fiber layer. Optical coherence tomography (OCT) 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.

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 Jules Stein Eye Institute by preparing and duplicating graphic materials for presentation and publication.

Ophthalmic Ultrasonography Clinical Laboratory

The Ophthalmic Ultrasonography Clinical Laboratory, directed by **Drs. Ralph D. Levinson** and **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 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 lens calculation examinations are also performed in the Laboratory. Biometry measures the axial eye length, anterior chamber depth, and lens thickness; 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 pinpoint lights 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 multi-focal 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 Jules 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. Pre- and post-doctoral 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 Department of Ophthalmology and the Institute extend instruction to UCLA medical students in their second, third, and fourth years of enrollment. Through lectures, demonstrations, discussions, and clinical practice, the students have numerous training opportunities from which to gain knowledge and experience in ophthalmology.

All second-year medical students participate in a four-day program that encompasses the ophthalmology portion of Fundamentals of Clinical Medicine. Third-year medical students complete a one-week rotation in ophthalmology, and the fourth-year medical student program is made up of various elective programs. Elective courses provide intensive exposure to clinical ophthalmology and basic visual sciences.

UCLA Ophthalmology Residency Program

The Department of Ophthalmology conducts an accredited three-year residency program for 24 residents; eight 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 Jules Stein Eye Institute, Harbor-UCLA Medical Center, Olive View-UCLA Medical Center, and the Veterans Affairs Greater Los Angeles Health-care 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 Jules 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 and Clinical Sciences Course. These lectures are followed by Grand Rounds, consisting 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.



The Microsurgery Teaching Laboratory enables residents and fellows to hone their surgical skills throughout their training.

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; 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. They present the results of their work at the Jules 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.

EyeSTAR Program

The EyeSTAR (Specialty Training and Advanced Research) Program 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 has a doctorate. EyeSTAR trainees work under the guidance of a faculty advisory panel representing the trainee's clinical and research interests.

This unique program is geared to physicians committed to academic careers in ophthalmology, combining basic science with clinical practice in a five- or six-year curriculum. Trainees select their faculty mentors and laboratories or research groups from a wide range of participants throughout the David Geffen School of Medicine at UCLA, College of Letters and Sciences, School of Public Health, Clinical Scholars Program, and RAND Graduate School.

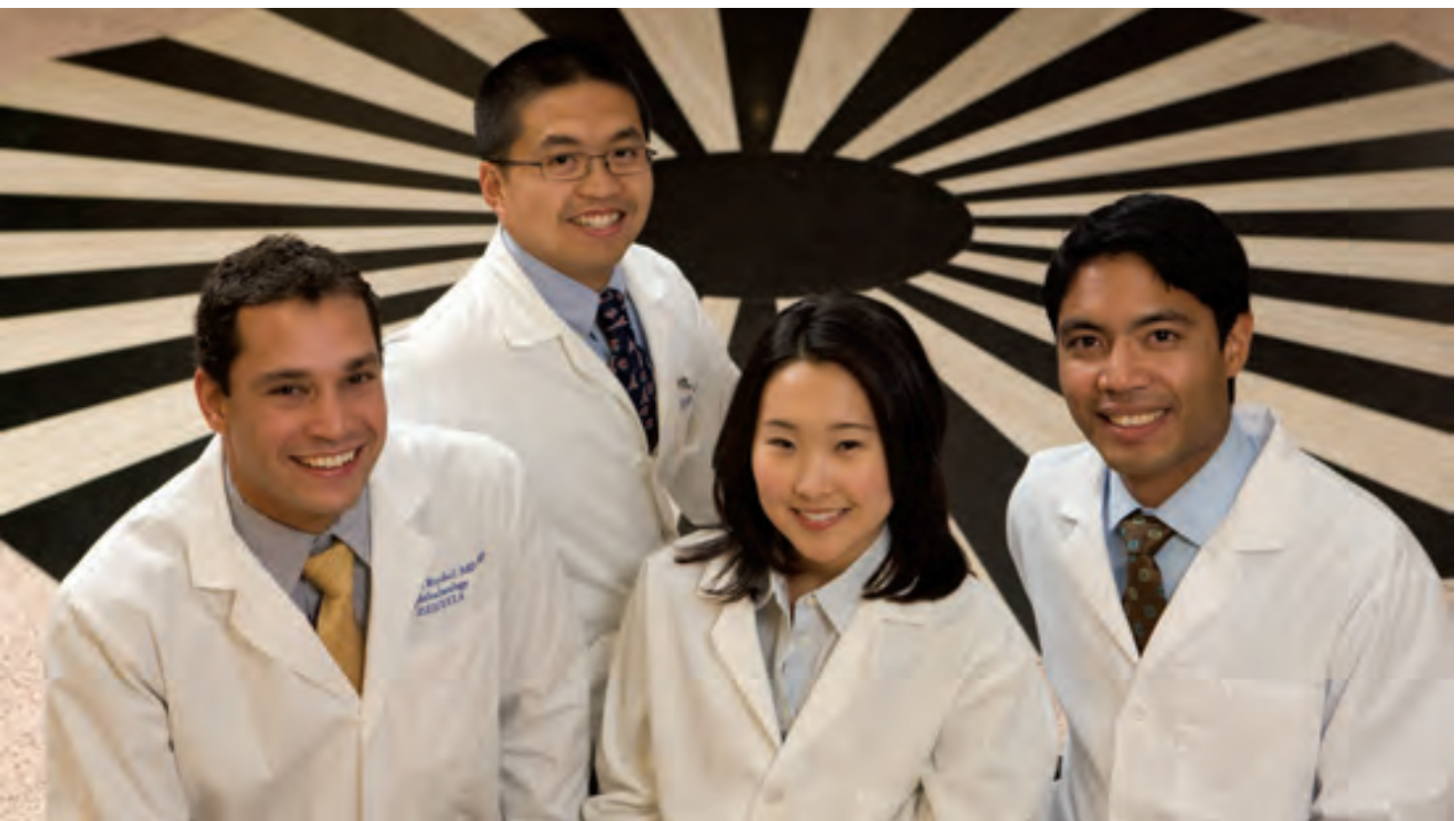
EyeSTAR residents combine vision science training with an ophthalmology residency.

UCLA Ophthalmology and Vision Science Fellowship Programs

The Jules Stein Eye Institute offers stipends to enable particularly well qualified persons to receive and contribute to training and research at the predoctoral and postdoctoral levels. Fellows usually concentrate on specific areas of clinical ophthalmology or vision science.

Clinical fellowship training combines outpatient, inpatient, and surgical experience in an ophthalmic subspecialty. The fellow assumes increasing responsibility for patient care under the supervision of faculty members responsible for the program. In addition to receiving instruction 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 basic or clinical 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, or over 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. They may work on individual projects or contribute to faculty projects. The scope and nature of each vision science fellowship is developed by the trainee and his/her faculty mentor.



Clinical and vision science fellowships offered by the Institute are described below.

Fellowship in Comprehensive Ophthalmology

The Comprehensive Ophthalmology Division offers a one-year fellowship under the direction of **Dr. Kevin M. Miller**. The fellowship prepares graduates of residency training programs for careers in academic comprehensive ophthalmology, emphasizing the latest techniques in cataract surgery and combined cataract-refractive surgery. Fellows gain clinical experience by working under the program director in the comprehensive ophthalmology consultation suite and University Ophthalmology Associates, performing independent and supervised surgery and supervising residents. Teaching is an integral part of the fellowship experience. Fellows are expected to be instructors in courses offered by the Comprehensive Ophthalmology Division, instruct medical students, present cases at Grand Rounds, and participate in courses offered during the annual American Society of Cataract and Refractive Surgery and American Academy of Ophthalmology meetings. Fellows are also expected to undertake several clinical research projects during the year and are required to present the results of one study at one of the meetings.

Fellowship in Contact Lens Practice

The one-year fellowship, under the direction of **Drs. Barry A. Weissman** and **Melissa W. Chun**, offers optometrists and ophthalmologists advanced training in contact lens care. Fellows participate in patient care in the Jules Stein Eye Institute Contact Lens Center. Working with optometrists, ophthalmology residents, and ophthalmology fellows of various subspecialties provides training opportunities for routine and specialized contact lens and comprehensive ophthalmology services in a multidisciplinary setting. Specialized services include complicated contact lens fittings for all types of astigmatism, adult and pediatric aphakia, presbyopia, post surgical corneas, irregular corneas secondary to trauma, and diseased corneas. Fellows are encouraged to participate in ongoing research in contact lens care and to initiate personal research activities related to patient care and/or laboratory study. In this way, fellows become versed in current scientific thought related to a variety of contact lens topics, such as immunology and microbiology of contact lens wear, contact lens optics, and oxygen delivery through contact lens materials.

Fellowship in Cornea–External Ocular Diseases and Refractive Surgery

Under the direction of **Drs. Anthony J. Aldave, Bartly J. Mondino, Gary N. Holland, Sophie X. Deng, Barry A. Weissman, and David Rex Hamilton**, 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 Jules Stein Eye Institute. Fellows work in the microsurgical laboratory, and assist in teaching microsurgical skills to ophthalmology residents. Under the direction of faculty, they also perform primary surgical procedures in the UCLA Laser Refractive Center. In addition to in-depth training at the Institute, fellows supervise patient care in the cornea clinics at the West Los Angeles Veterans Affairs Healthcare Center. Experience and knowledge concerning contact lens fitting, contact lens management, and related aspects of corneal physiology are also obtained. 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- or two-year glaucoma fellowship provides clinical and laboratory experience in glaucoma diagnosis and management. Clinical experience is gained by examining patients in the consultation suite and participating in their clinical and surgical management. Fellows work in the glaucoma microsurgical 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. They participate in glaucoma teaching at the Jules 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.



Vision science fellows engage in research in highly specialized laboratory environments.

Fellowship in Neuro-Ophthalmology

The one-year fellowship in neuro-ophthalmology, under the direction of **Dr. Anthony C. Arnold**, 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 neuro-radiology. Fellows attend the weekly Neurology and Neurosurgery Grand Rounds, take an active part in seeing relevant inpatient 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**, the fellowship provides preparation for an academic career in ophthalmic pathology. One-, two-, 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 and 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. Henry I. Baylis, Robert Alan Goldberg, Jonathan Hoenig, and Norman Shorr**, provide training for ophthalmologists who are interested in specializing in orbital and adnexal disorders, and in aesthetic and reconstructive orbito-facial surgery. The fellowship program is approved by the American Society of Ophthalmic Plastic and Reconstructive Surgery and the American Academy of Cosmetic Surgery. Fellows participate in orbital and ophthalmic plastic surgery outpatient consultation, inpatient care, and surgical procedures at the Jules Stein Eye Institute and affiliated hospitals. They also participate extensively in the continuing education 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. One to two international fellows also participate in the program annually.

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** and formerly **Dr. Arthur L. Rosenbaum** (deceased). Clinical experience consists of supervised participation in the ophthalmic care of pediatric patients seen at the Jules 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, 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 Uveitis and Inflammatory Eye Diseases

The one-year fellowship, under the direction of **Drs. Gary N. Holland and Ralph D. Levinson**, offers comprehensive training in the evaluation and management of uveitis and other inflammatory eye diseases. Fellows participate in faculty practices at the Jules Stein Eye Institute, as well as uveitis clinics of two Los Angeles County hospitals, assisting with diagnostic evaluations, emergency cases, management of immunomodulatory therapies, and perioperative care of patients undergoing surgical procedures. Research is an integral part of the fellowship program. Fellows may become involved in patient- or laboratory-based projects, including special research programs in the Ocular Inflammatory Disease Center and collaborations with investigators at other institutions. Fellows typically complete and publish one or two original research articles, and frequently prepare a book chapter or review on a subject of interest. Support is provided for fellows to participate in the activities of related subspecialty organizations, such as the annual meetings of the American Uveitis Society.

Fellowship in Vitreoretinal Diseases and Surgery

The fellowship in vitreoretinal diseases and surgery is designed to provide an opportunity for appropriate clinical training and for clinical or vision science research related to retinal disease, over a two-year period. Special training includes the prevention, diagnosis, and treatment of retinal, choroidal, vitreous, and related ocular diseases. Under the direction of **Drs. Steven D. Schwartz, Michael B. Gorin, Allan E. Kreiger, Jean-Pierre Hubschman, Colin A. McCannel, Tara A. McCannel, David Sarraf, and Bradley R. Straatsma**, the fellowship consists of the following major components: diabetic retinopathy, diseases of the macula and retina, fluorescein angiography and retinal photography, hereditary retinal degenerations, ocular trauma, ophthalmic oncology, rhegmatogenous retinal disease and vitreoretinal surgery, and ultrasonography.

Fellowships in Vision Science

Predocutorial 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** and directed by **Dr. Gabriel H. Travis**.

Predocutorial fellows take a defined program of core courses and carry out eye-related research, obtaining doctorates in about six years. Fellows are required to present their research at informal and formal seminars, and 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.

International Fellowship and Exchange Program

To promote and encourage research and education interaction with ophthalmology institutions throughout the world, the Jules Stein Eye Institute offers an International Ophthalmology Fellowship and Exchange Program consisting of one- 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.

Appendices



Volunteer and Consulting Faculty

Volunteer Faculty in Ophthalmology

Clinical Professor of Ophthalmology

Henry I. Baylis, MD
Founding Chief of the
Orbital and Ophthalmic
Plastic Surgery Division

Bruce B. Becker, MD
Michael S. Berlin, MD
Norman E. Byer, MD
William P. Chen, MD
Glenn O. Dayton, MD
Paul D. Deiter, MD
Donald E. Dickerson, MD
Richard Elander, MD
Leland M. Garrison, 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 E. Levenson, MD
Ezra Maguen, MD
Robert K. Maloney, MD
Samuel Masket, MD
Albert T. Milauskas, MD
Leon G. Partamian, MD
Irvin S. Pilger, MD
George B. Primbs, MD
Yaron S. Rabinowitz, MD
Teresa O. Rosales, MD
Robert J. Schechter, MD
Stephen S. Seiff, MD
Alan L. Shabo, MD
Norman Shorr, MD
Robert M. Sinskey, MD
Roger W. Sorenson, MD
Howard H. Stone, MD

Associate Clinical Professor of Ophthalmology

Reginald G. Ariyasu, MD, PhD
Charles R. Barnes, MD
Gerald J. Barron, MD
Arnold L. Barton, MD
Louis Bernstein, MD
W. Benton Boone, MD
Andrew E. Choy, MD
Melissa W. Chun, OD
Peter J. Cornell, MD
Bernard S. Davidorf, MD
Uday Devgan, MD
Paul B. Donzis, MD
Robert E. Engstrom, Jr., MD
Donald S. Fong, MD, MPH
Donald I. Goldstein, MD
Michael J. Groth, MD
Thomas A. Hanscom, MD
Andrew Henrick, MD
Edwin P. Hill, MD
Eugene F. Hoffman, Jr., MD
David F. Kamin, MD
Stanley M. Kopelow, MD
Joseph N. Lambert, MD
Brian L. Lee, MD
Jonathan I. Macy, MD
M. Gene Matzkin, MD
Joan E. McFarland, MD
James W. McKinzie, MD
Alan L. Norton, MD
John F. Paschal, MD
Gene J. Pawlowski, MD
Sidney W. Penn, 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
William C. Stivelman, MD
Hector L. Sulit, MD
Kamal A. Zakka, MD

Assistant Clinical Professor of Ophthalmology

David H. Aizuss, MD
Malvin B. Anders, MD
Richard K. Apt, MD
Arthur A. Astorino, MD
John D. Bartlett, MD
Mark A. Baskin, MD
J. Kevin Belville, MD
Arthur Benjamin, MD
Katherine L. Bergwerk, MD
Betsy E. Blechman, MD
Cynthia A. Boxrud, MD
Amarpreet S. Brar, MD
Harvey A. Brown, MD
Almira W. Cann, MD, PhD
Arnett Carraby, MD
Andrew M. Chang, 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
Joseph M. Faust, MD
Doreen T. Fazio, MD
Sanford G. Feldman, MD
David R. Fett, MD
Laura E. Fox, MD
Ron P. Gallemore, MD
George H. Garcia, MD
Kathryn M. Gardner, MD
Leslie C. Garland, MD
W. James Gealy, Jr., MD
Lawrence H. Green, MD
Man M. Singh Hayreh, MD
Matthew L. Hecht, MD
Jonathan A. Hoenig, MD
Jeffrey Hong, MD
Morton P. Israel, MD
Steven J. Jacobson, MD
Véronique H. Jotterand, MD
J. David Karlin, MD
David S. Katzin, MD
James F. Kleckner, MD
Jerome R. Klein, MD
Craig H. Kliger, MD
Howard E. Lazerson, MD
Steven Leibowitz, MD

Robert T. Lin, MD
 Joanne E. Low, MD
 Bryant J. Lum, MD
 Michael C. Lynch, MD
 M. Polly McKinstry, MD
 Ashish M. Mehta, MD
 George L. Miller, MD
 Kenneth J. Miller, MD
 David R. Milstein, MD
 Ronald L. Morton, MD
 Lee T. Nordan, MD
 Roger L. Novack, MD, PhD
 Alpa A.S. Patel, MD
 James H. Peace, MD
 Gilbert S. Perlman, MD
 Cheryl J. Powell, MD
 John R. Privett, MD
 Firas Rahhal, MD
 George M. Rajacich, MD
 Jay J. Richlin, MD
 Laurence N. Roer, MD
 Gerald S. Sanders, MD
 Barry S. Seibel, MD
 Meryl Shapiro-Tuchin, MD
 David M. Shultz, MD
 Eliot B. Siegel, MD
 Lance M. Siegel, MD
 John D. Slaney, MD
 Robert J. Smyth-Medina, MD
 Kenneth O. Sparks, MD
 Sadiqa Stelzner, MD
 Robert C. Tarter, MD
 Debra G. Tennen, MD
 Teddy Y. Tong, MD
 Sterling M. Trenberth, MD
 Robert C. Tudor, MD
 Henry E. Ullman, MD
 Tay J. Weinman, MD
 Irwin S. Weiss, MD
 Sidney J. Weiss, MD
 Scott Whitcup, MD
 David L. Williams, MD
 Jeffrey V. Winston, MD
 David L. Wirta, MD
 Barry J. Wolstan, MD
 Wilson C. Wu, MD, PhD
 Michael C. Yang, MD
 Richard H. Yook, MD
 Peter D. Zeegen, MD

Clinical Instructor in Ophthalmology

Eduardo Besser, MD
 Maria Braun, MD
 Neil D. Brouman, MD
 Stephen S. Bylsma, MD
 Joseph H. Chang, MD
 John J. Darin, MD
 Paul J. Dougherty, MD
 Daniel Ebroon, MD
 Brad S. Elkins, MD
 Satvinder Gujral, MD
 Lawrence M. Hopp, MD, MS
 John A. Hovanesian, MD
 Batool Jafri, MD
 Aarchan Joshi, MD
 Anisha J. Judge, MD
 Rajesh Khanna, MD
 Julie A. King, MD
 Mark H. Kramar, MD
 Daniel Krivoy, MD
 Laurie C. McCall, MD
 David Paikal, MD
 Jayantkumar Patel, MD
 Susan Ransome, MD
 Steven H. Rauchman, MD
 Robert M. Schwarcz, MD
 Kayar Shah, MD
 Mark Silverberg, MD
 Sharon N. Spooner-Dailey, MD
 Dana P. Tannenbaum, MD
 William L. Trotter, MD
 Mathew Wang, MD
 Peter H. Win, MD
 Patrick Yeh, MD

Consulting Members of the Jules 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
 Director, UCLA-DOE Institute
 for Genomics and Proteomics
 Professor, Departments of
 Chemistry & 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
 Sherman M. Mellinkoff, MD
 Professor Emeritus of Medicine
 Former Dean, UCLA School
 of Medicine
 C. Kumar Patel, PhD
 Professor, Department of
 Physics and Astronomy
 Antoni Ribas, MD
 Associate Professor, Departments
 of Hematology/Oncology and
 Surgical Oncology
 Assistant Director for
 Clinical Programs, UCLA
 Human Gene Medicine Program
 Director, JCCC Cell and
 Gene Therapy Core Facility
 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, Neuropsychiatric Institute
 Physician in Chief,
 Neuropsychiatric Hospital

Residents and Fellows

Residents

Third-Year Residents 2007–2010

Vicki K. Chan, MD
Heather S. Chang, MD
Monica Ralli Khitri, MD
Seongmu Lee, MD
Gina Y. Lee, MD
Le Yu, MD
Alex Yuan, MD, PhD (EyeSTAR)

Second-Year Residents 2008–2011

Darin R. Goldman, MD
Jennifer S. Huang, MD
Roger Duncan Johnson, Jr., MD
Annie K. Lim, MD
Vicky C. Pai, MD
Louis M. Savar, MD
Amelia Chen Sheh, MD

First-Year Residents 2009–2012

Robert M. Beardsley, MD
Jamison J. Engle, MD
Shaheen P. Karim, MD (EyeSTAR)
Hanna Y. Kim, MD
John D. Pitcher, MD
Joanne C. Wen, MD
Allen B. Yeroushalmi, MD
Sandy X. Zhang-Nunes, MD

EyeSTAR Trainees

Shaheen P. Karim, MD
Diana Katsman, MD
Helen Lee, MD, PhD
C. Nathaniel Roybal, MD, PhD
Alex Yuan, MD, PhD

Clinical Fellows

Comprehensive Ophthalmology

Rachel Feit-Leichman, MD

Corneal and External Ocular Diseases and Refractive Surgery

Timmy A. Kovoov, MD
Olivia L. Lee, MD

Glaucoma

Geetha Ganti Vedula, MD
Houman Vosoghi, MD

Orbital and Ophthalmic Plastic Surgery

Shu-Hong Holly Chang, MD
Catherine J. Hwang, MD, MPH

Uveitis and Inflammatory Eye Disease

Partho S. Kalyani, MD
Michael A. Kapamajian, MD

Vitreoretinal Diseases and Surgery

Allen Hu, MD
Atul Jain, MD
Pradeep S. Prasad, MD
Irena Tsui, MD

Specialized Clinical Fellow

Sharon Lee, OD (Contact Lens)

International Fellows

Cornea-External Ocular Disease

Elmira Baghdasaryan, MD
Yerevan, Armenia
Kunjal Sejjal, MD
Hyderabad, India

Glaucoma

Elena Bitrian, MD
Barcelona, Spain
Chutima Supawavej, MD
Bangkok, Thailand

Neuro-Ophthalmology

Majed Al-Obailan, MD
Riyadh City, Saudi Arabia

Orbital and Ophthalmic Plastic Surgery

Kam-Lung Chong, MD
Hong Kong, China
Imran Jarullazada, MD
Baku, Azerbaijan

Pediatric Ophthalmology

Abubaker Affan, MD
Derna, Libya
Ramesha Kekunnaya, MD
Hyderabad, India
Tzu-Hsun Tsai, MD
Taipei, Taiwan

Uveitis and Refractive Surgery

Abdullah M. Alfawaz, MD
Jedda, Saudi Arabia
Narumon Keorochana, MD
Bangkok, Thailand

Vitreoretinal Diseases and Surgery

Gad Heilweil, MD
Tel Aviv, Israel

Postdoctoral Research Fellows

Chang-Sheng Chang, PhD
Emilie Colin, PhD
Jeremy Cook, PhD
Tanja Diemer, PhD
Maren Englehardt, PhD
Oluwatoyin Fafowora, MD, MPH
Mark Fleissner, PhD
Rajendra Kumar Gangalum, PhD
Mei Jiang, PhD
Zhe Jing, PhD
Joanna Kaylor, PhD
Miyeon Kim, PhD
Gergana Kodjebacheva, PhD
Vanda Lopes, PhD
Maryam Mokhtarzadeh, MD
Shawn Morales, PhD
Martin Nakatsu, PhD
Kun Do Rhee, PhD
Agrani Rump, PhD
Kiyo Sakagami, PhD
Shanta Sarfare, PhD
Veena Theendakara, PhD
Amy Tien, PhD
Chinatsu Tosha, PhD
Deepti Trivedi, PhD
Thu Thuy Truong, PhD
Ned Van Eps, PhD
Zhongyu Yang, PhD
Jang “Lawrence” Yoo, PhD
Alejandra Young, PhD
Quan Yuan, PhD

Predocctoral Research Fellows

Michael Bridges
Kelly Cadenas
Robert Kent Fanter
Helene Garneau
Jun Isobe
Michael Lerch
Carlos Lopez
Sheryll Mangahas
John McCoy
Anita Narasimhan
Caroline Sham
Andrew Shin
Dora Toledo Warshaviak

Educational Offerings

Ophthalmology and Vision Science Training Programs

Fifteenth Annual Vision Science Conference

October 23–25, 2009

At this annual event, sponsored jointly by the Jules Stein Eye Institute and the National Eye Institute Vision Science Training Grant, pre- and postdoctoral fellows and faculty discuss a wide range of topics in vision science research.

Ophthalmology Basic and Clinical Science Course

Course Chairman
Bartly J. Mondino, MD

This course is a major segment of the education 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 three-year period. First-year residents participate in a more intensive curriculum in order to obtain a comprehensive foundation of ophthalmologic knowledge. In 2009–2010, the following course components were offered:

Lens and Cataract

September 2–September 30, 2009
Section Chairman
Kevin M. Miller, MD

Optics, Refraction and Contact Lens

October 7–November 4, 2009
Section Chairman
Barry A. Weissman, OD, PhD

Fundamentals and Principles of Ophthalmology

November 11–December 16, 2009
Section Chairman
Joseph L. Demer, MD, PhD

Neuro-Ophthalmology

December 23, 2009–February 17, 2010
Section Chairman
Anthony C. Arnold, MD

Glaucoma

February 24–March 31, 2010
Section Chairman
Joseph Caprioli, MD

Intraocular Inflammation and Uveitis

April 7–June 2, 2010
Section Chairman
Gary N. Holland, MD

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.

Vision Science Seminar Series

Coordinator
Suraj P. Bhat, PhD

This seminar series, conducted throughout the academic year, allows faculty within the Jules 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.

Phacoemulsification Course

October 10, 2009
March 27, 2010

Course Director
Kevin M. Miller, MD

This course is a key component of the residency-training program, as well as a resource for practicing ophthalmologists. Both classroom and laboratory instruction are offered, covering in detail the procedural and anatomical components of modern sutureless phacoemulsification.

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.

Fluorescein Angiography 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.

Glaucoma Weekly Conference

This 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 clinical 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 Jules 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, and Arthur L. Rosenbaum, MD, at the Jules Stein Eye Institute.

Pediatric Rheumatology and Uveitis Conference

Members of the Uveitis Service meet each week with members of the Rheumatology Service from the Department of Pediatrics to discuss patient care issues and research topics of mutual interest. The conference is attended by faculty, clinical fellows from the Departments of Ophthalmology and Pediatrics, and research staff. The conference is coordinated by Gary N. Holland, MD.

Continuing Education Programs

Aesthetic Eyelid and Orbitofacial Surgery Course

July 10–11, 2009

Robert Axelrod Memorial Lecturer
Jonathan W. Kim, MD
Palo Alto, California

Held by the Orbital and Ophthalmic Plastic Surgery Division, this event attracted ophthalmologists, dermatologists and cosmetic surgeons from around the country and Asia. Surgical demonstrations, a cadaver dissection and didactic lectures informed participants of the latest advances in the field of aesthetic and reconstructive surgery for the eyelids and face.

Joint Symposium on Cornea and Retina

January 10, 2010

Course Chair
Melissa W. Chun, OD

Optometrists from across California traveled to Los Angeles to attend the 12th Annual Jules Stein Eye Institute and Southern California College of Optometry Joint Optometric Symposium focusing on Cornea and Retina. The program included lectures by featured speakers from the Jules Stein Eye Institute and other institutions.

Comprehensive Ophthalmology Review Course

March 11–14, 2010

Course Directors
David Sarraf, MD
John Irvine, MD

The Jules Stein Eye Institute and the Doheny Eye Institute sponsored the Fifth 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.

JSEI Clinical and Research Seminar

May 14, 2010

Coordinators

Anthony C. Arnold, MD
Robert Alan Goldberg, MD
Gary N. Holland, MD
Bartly J. Mondino, MD
Xian-Jie Yang, PhD

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.

41st Jules Stein Lecturer

Joe G. Hollyfield, PhD
Professor of Ophthalmology
Chairman, Ophthalmic Research
Llura and Gordon Gund Professor of Ophthalmology Research
Cole Eye Institute, Cleveland Clinic
Cleveland, Ohio

8th Bradley R. Straatsma Lecturer

Michael T. Trese, MD
Chief, Pediatric and Adult
Vitreoretinal Surgery
William Beaumont Hospital
Professor of Biomedical Science
Oakland University
CEO, Associated Retinal Consultants
Royal Oak, Michigan

8th Thomas H. Pettit Lecturer

R. Michael Duffin, MD
Adjunct Associate Professor of Ophthalmology and Visual Sciences
University of Utah
Hospitals and Clinics
Salt Lake City, Utah

Research Contracts and Grants Fiscal Year 2009–2010

Vision Science Grants	Total Award
Anthony J. Aldave, MD	
Cloning/Gene/Posterior Corneal Dystrophy National Eye Institute Duration: 9/30/05–8/31/10	\$831,195
Cloning/Gene/Posterior Corneal Dystrophy National Eye Institute: ARRA Administrative Supplement Duration: 9/1/09–8/31/11	\$166,240
Large Scale Sequencing of the Common Posterior Polymorphous Corneal Dystrophy Candidate Gene Interval Gerald Oppenheimer Family Foundation Center for the Prevention of Eye Disease Duration: 1/1/09–12/31/09	\$30,000
Suraj P. Bhat, PhD	
Gene Expression in Normal and Cataractous Lens National Eye Institute Duration: 6/1/06–5/31/11	\$2,444,126
Gene Expression in Normal and Cataractous Lens National Eye Institute: ARRA Administrative Supplement Duration: 1/1/10–12/31/10	\$79,000
Dean Bok, PhD	
Indentification and Cellular Localization of Gene Products that Affect Photoreceptor Survival in Inherited Retinal Degeneration Macula Vision Research Foundation Duration: 4/1/08–3/31/11	\$150,000
Dean Bok, PhD, Center Director w/ Debora B. Farber, PhD, DPhc, Michael B. Gorin, MD, PhD, Steven Nusinowitz, PhD, Gabriel H. Travis, MD, Xian-Jie Yang, PhD	
Foundation Fighting Blindness Center Grant Foundation Fighting Blindness Duration: 7/1/05–6/30/10	\$1,813,566
Joseph Caprioli, MD	
Determining Visual Field Progression Rates and Prediction Through Humphrey Perimetry in Glaucoma Gerald Oppenheimer Family Foundation Center for the Prevention of Eye Disease Duration: 1/1/10–12/31/10	\$30,000
Anne L. Coleman, MD, PhD	
Student Sight Savers Program Friends of the Congressional Glaucoma Caucus Foundation Duration: 12/21/04–11/30/10	\$19,000
Ocular Hypertension Treatment Study (OHTS) NEI/Charles R. Drew University Duration: 1/1/00–12/31/09	\$1,179,359
Alcon Funding Alcon Laboratories Duration: 12/1/07–11/31/09	\$69,054

Total awards for NIH, Clinical, and PI-Initiated Research include indirect cost.

Joseph L. Demer, MD, PhD

Biomechanical Analysis in Strabismus Surgery

National Eye Institute

Duration: 5/1/06–4/30/11

\$2,647,114

Walt and Lilly Disney Award for Amblyopia Research

Research to Prevent Blindness

Duration: 7/1/04–12/30/10

\$75,000

Genetic and Anatomic Basis of the Fibrosis Syndrome

NEI/Boston Childrens Hospital

Duration: 12/1/08–11/30/10

\$117,560

Sophie X. Deng, MD, PhD

Regeneration of Limbal Stem Cells from Epidermal Epithelial Stem Cells and

Induced Pluripotent Stem Cells

Gerald Oppenheimer Family Foundation Center for the Prevention of Eye Disease

Duration: 7/1/09–6/30/10

\$30,000

Gordon L. Fain, PhD

Physiology of Photoreceptors

National Eye Institute

Duration: 8/1/08–7/31/12

\$1,000,000

Debora B. Farber, PhD, DPhhc

Molecular Mechanisms in Retinal Degeneration

National Eye Institute

Duration: 7/1/06–11/30/11

\$1,507,647

Stem Cell Microvesicles: Potential Tools for Retinal Regeneration

National Eye Institute

Duration: 12/1/07–11/30/09

\$406,250

Does a Constitutively Active Gai3 Protein Rescue the Oa1^{-/-}-phenotype?

Vision of Children

Duration: 4/1/08–3/31/10

\$50,000

Characterization of Micro RNAs in Embryonic Stem Cell Microvesicles

Hope for Vision

Duration: 1/1/09–12/31/09

\$40,000

Characterization of the Interaction between ZBED4, a Novel Retinal Protein, and SAFB1

Hope for Vision

Duration: 11/1/09–10/31/11

\$60,000

JoAnn A. Giaconi, MD

Nutritional Associations w/Glaucoma/African American Women

American Glaucoma Society

Duration: 2/1/06–12/31/10

\$40,000

Ben J. Glasgow, MD

Proteins in Molecular Mechanisms of Tear Film Formation

National Eye Institute

Duration: 7/1/06–6/30/11

\$1,250,000

Total awards for NIH, Clinical, and PI-Initiated Research include indirect cost.

Lynn K. Gordon, MD, PhD

EMP2, in Homeostasis of RPE

VA Merit Grant

Duration: 3/5/05–3/31/10

\$650,000

Novel Therapies to Prevent Blindness Caused by Proliferative Vitreoretinopathy

National Eye Institute

Duration: 4/1/10–3/31/15

\$1,250,000

Michael B. Gorin, MD, PhD

Genetics in Age-Related Maculopathy

National Eye Institute

Duration: 4/1/07–3/31/12

\$6,445,729

Genetics in Age-Related Maculopathy

National Eye Institute: ARRA Administrative Supplement

Duration: 9/30/09–9/29/11

\$730,926

Linkage and Association Studies for Macular Degeneration

American Health Assistance Foundation

Duration: 4/1/06–3/31/10

\$150,000

Behavioral and Molecular Mechanisms of Photophobia: Investigating the Role of Retinal Ganglion Cells and TRPV1

Gerald Oppenheimer Family Foundation Center for the Prevention of Eye Disease

Duration: 1/1/09–12/31/09

\$30,000

D. Rex Hamilton, MD

Development of Diagnostic Techniques for Detection of Corneal

Biomechanical Abnormalities

Gerald Oppenheimer Family Foundation Center for the Prevention of Eye Disease

Duration: 1/1/09–12/31/09

\$30,000

Gary N. Holland, MD

Studies of Ocular Complications of AIDS (SOCA)

National Eye Institute

Duration: 8/1/05–7/31/10

\$2,061,462

Longitudinal Studies of Ocular Complications of AIDS (LSOCA)

National Eye Institute

Duration: 8/1/03–7/31/10

\$1,017,221

Multicenter Uveitis Steroid Treatment (MUST) Trial

National Eye Institute

Duration: 12/1/10–11/30/17

\$983,080

Joseph Horwitz, PhD

Alpha-Crystallin and Cataractogenesis

National Eye Institute

Duration: 8/1/04–7/31/10

\$2,747,031

Alpha-Crystallin and Cataractogenesis

National Eye Institute: ARRA Administrative Supplement

Duration: 8/1/09–7/31/11

\$241,644

Total awards for NIH, Clinical, and PI-Initiated Research include indirect cost.

Wayne L. Hubbell, PhD

Molecular Basis of Membrane Excitation
National Eye Institute
Duration: 5/1/10–4/30/15 \$2,852,722

Core Grant for Vision Research at Jules Stein Eye Institute
National Eye Institute
Duration: 3/1/10–2/28/15 \$2,737,632

Core Grant for Vision Research at Jules Stein Eye Institute
National Eye Institute: ARRA Administrative Supplement
Duration: 3/1/10–2/28/15 \$696,196

Sherwin J. Isenberg, MD

A Clinical Trial of Povidone-Iodine for the Treatment of Fungal Corneal Ulcers
Thrasher Research Foundation
Duration: 3/10/08–8/31/09 \$254,219

Conjunctival Tissue Gas Monitoring to Prevent Eye Disease in Newborns
Gerald Oppenheimer Family Foundation Center for the Prevention of Eye Disease
Duration: 1/1/10–12/31/10 \$30,000

Simon K. Law, MD, PharmD

Optic Disc Appearance in Advanced Age-Related Macular Degeneration
American Geriatrics Society
Duration: 7/1/07–6/30/10 \$150,000

Ralph D. Levinson, MD

Studies in Immunogenetics of Ocular Inflammation Disease
MacDonald Family Foundation
Duration: 5/1/02–6/30/10 \$350,000

Immunologic and Clinical Studies of Eye Disease at the Jules Stein Eye Institute
MacDonald Family Foundation
Duration: 12/1/08–1/31/11 \$150,000

Tara A. McCannel, MD, PhD

High Resolution Cytogenetic Study of Archival Metastatic Choroidal Melanoma
American Association for Cancer Research (AACR)
Duration: 7/1/08–6/30/11 \$100,000

Bartly J. Mondino, MD

Bruce Ford and Anne Smith Bundy Foundation Grant (annual)
Bruce Ford and Anne Smith Bundy Foundation
Duration: 2009–2010 \$100,000

Departmental Grant Award (annual)
Research to Prevent Blindness
Duration: 2009–2010 \$100,000

Steven Nusinowitz, PhD, Principal Investigator**w/Dean Bok, PhD, Michael B. Gorin, MD, PhD**

Clinical Studies of Stargardt Disease and Development of a New Mouse Model of Stargardt Disease
Daljit S. and Elaine Sarkaria Stargardt Macular Dystrophy Research Fund
Duration: 7/1/07–6/30/11 \$1,025,000

Total awards for NIH, Clinical, and PI-Initiated Research include indirect cost.

Ocular SHV: Role of Virus & IL-2 Optic Neuritis
 Cedars-Sinai Burns & Allen Research Inst./ NIH
 Duration: 9/30/06–8/31/11 \$30,460

Natik I. Piri, PhD

The Retinal Ganglion Cell Protective Role of Alpha Crystallins Against
 Glaucomatous Neurodegeneration
 Gerald Oppenheimer Family Foundation Center for the Prevention of Eye Disease
 Duration: 1/1/09–12/31/09 \$30,000

The Neuroprotective Effect of HSP72 Induction in Experimental Glaucoma
 National Eye Institute
 Duration: 9/30/09–8/31/14 \$1,347,500

Arthur L. Rosenbaum, MD

Physician-Scientist Award
 Research to Prevent Blindness
 Duration: 1/1/04–12/31/10 \$55,000

Steven D. Schwartz, MD

Mrs. Merrill Park Award
 Research to Prevent Blindness
 Duration: 6/15/01–12/31/09 \$10,000

Gabriel H. Travis, MD

The Role of Muller Cells in Visual Pigment Regeneration
 National Eye Institute
 Duration: 3/1/08–2/28/13 \$1,925,000

Vision Science Training Grant to Researchers at Jules Stein Eye Institute
 National Eye Institute
 Duration: 9/30/05–9/29/10 \$1,628,914

Biochemical and Genetic Analysis of the Visual Cycle
 National Eye Institute
 Duration: 9/9/05–7/31/10 \$1,931,250

A2E Accumulation in the Macular Degenerations:
 Pathogenic Significance and Implications for Treatment
 Macula Vision Research Foundation
 Duration: 7/1/07–6/30/11 \$240,000

Development of a Stem Cell-Based Transplantation Strategy for Treating
 Age-Related Macular Degeneration
 California Institute for Regenerative Medicine (CIRM)
 Duration: 11/01/09–10/31/12 \$5,500,173

David S. Williams, PhD

Doris and Jules Stein Research to Prevent Blindness Professorship
 Research to Prevent Blindness
 Duration: 1/1/08–12/21/12 \$500,000

Retinal Cell Biology of Usher 1 Proteins
 National Eye Institute
 Duration: 12/1/07–11/30/09 \$366,371

Total awards for NIH, Clinical, and PI-Initiated Research include indirect cost.

<p>MY07A Gene Therapy for Usher 1B-UCLA National Neurovision Research Institute (NNRI) a support organization of The Foundation Fighting Blindness, Inc. Wynn-Gund Translational Research Acceleration Program Award Duration: 7/1/08–6/30/13</p>	\$1,325,415
<p>Retinal Cell Biology of Myosin VIIA National Eye Institute Duration: 7/1/09–6/30/14</p>	\$1,925,000
<p>Kinesin in Photoreceptor Cells National Eye Institute: ARRA Administrative Supplement Duration: 9/30/09–9/29/10</p>	\$385,000
<p>Progression of Retinal Degeneration Gerald Oppenheimer Family Foundation for the Prevention of Eye Disease Duration: 1/1/09–12/31/09</p>	\$30,000

Xian-Jie Yang, PhD

<p>Cytokine Signal Transduction in Retinal Development National Eye Institute Duration: 9/30/05–7/31/10</p>	\$1,506,044
<p>Hedgehog Signaling in Photoreceptor Differentiation and Maintenance National Eye Institute Duration: 12/1/09–11/30/13</p>	\$1,540,000

Professional Research Series Grants

Novrouz Akhmedov, PhD, and Debora B. Farber, PhD, DPhhc

<p>Studies on the 7R Protein that is Associated with a Novel Locus for Retinitis Pigmentosa Hope for Vision Duration: 4/1/08–3/31/10</p>	\$25,000
<p>Studies on 7R, A Novel Protein that when Mutated Causes Autosomal Recessive Retinitis Pigmentosa Hope for Vision Duration: 3/1/10–2/28/11</p>	\$50,000

Roxanna A. Radu, PhD

<p>Analysis of A2E Degradation and Complement Activation American Health Assistance Foundation Duration: 4/1/08–6/28/10</p>	\$100,000
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Professional Clinical Series Grants

Federico G. Velez, MD

<p>Development of an Electrical-Stimulation Device to Prevent Strabismic Amblyopia Gerald Oppenheimer Family Foundation Center for the Prevention of Eye Disease Duration: 1/1/10–12/31/10</p>	\$30,000
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Total awards for NIH, Clinical, and PI-Initiated Research include indirect cost.

Postdoctoral Fellow Grants

Oluwatoyin Fafowora, MD

Anne L. Coleman, MD, PhD, Michael Gorin, MD, PhD (Mentors)

Fellowship: Heritability of Juvenile Glaucoma in a Genetically Diverse Population
Fogarty International Clinical Research Scholars Support Center at
Vanderbilt University
AAMC/National Eye Institute
Duration: 7/1/08–6/30/10

\$303,172

Fellowship: Heritability of Juvenile Glaucoma in a Genetically Diverse Population
Fogarty International Clinical Research Scholars Support Center at
Vanderbilt University
AAMC/National Eye Institute: ARRA Administrative Supplement
Duration: 7/1/09–6/30/10

\$80,719

Gergana Kodjebacheva, PhD

Anne L. Coleman, MD, PhD (Mentor)

Prevention of Visual Impairment and Blindness in School-Aged Children
Gerald Oppenheimer Family Foundation Center for the Prevention of Eye Disease
Duration: 1/1/10–12/31/10

\$30,000

Shawn Morales, PhD

Lynn K. Gordon, MD, PhD (Mentor)

Novel Therapies to Prevent Blindness caused by Ocular Trauma and
Proliferative Vitreoretinopathy
A.P. Giannini Foundation
Duration: 4/1/09–3/31/12

\$125,000

Veena Theendakara, PhD

Debora B. Farber, PhD, DPhhc (Mentor)

Studies on a Novel Gene ZBED4 in Relation to Patients with Cone Dystrophy
Gerald Oppenheimer Family Foundation Center for the Prevention of Eye Disease
Duration: 1/1/09–12/31/09

\$30,000

Characterization of ZBED4, a Novel Retinal Protein
Hope for Vision
Duration: 1/1/09–12/31/09

\$25,000

Lawrence Yoo, PhD

Joseph L. Demer, MD, PhD (Mentor)

Biomechanical Characterization and Modeling of Ocular Tissue
Gerald Oppenheimer Family Foundation Center for the Prevention of Eye Disease
Duration: 1/1/10–12/31/10

\$30,000

Alejandra Young, PhD

Debora B. Farber, PhD, DPhhc (Mentor)

Interactions of the Melanosomal G-Protein-Coupled Receptor
OA1 and Gai Proteins in the Retinal Pigment Epithelium
The Vision of Children Foundation
Duration: 6/1/10–3/31/12

\$108,930

Total awards for NIH, Clinical, and PI-Initiated Research include indirect cost.

Alex Yuan, MD, PhD**Debora B. Farber, PhD, DPhc (Mentor)**

Embryonic Stem Cell Microvesicles: A New Approach to RNA Transfer

The Vision of Children

Duration: 6/1/07–3/31/10

\$200,288

EyeSTAR Graduate Student Grants**Diana Katsman, MD, and Debora B. Farber, PhD, DPhc**

Activation of Retinal Regenerative Potential by

Embryonic Stem Cell-Derived Microvesicles

Hope for Vision

Duration: 1/15/10–1/14/12

\$150,000

Factors Released from Damaged Retinal Tissue and the Induction of

ES Cell Differentiation along Retinal Lineages

California Institute for Regenerative Medicine (CIRM)

Duration: 7/1/09–6/30/10

\$97,000

Clinical Trials**Joseph Caprioli, MD**

Measurement and Prediction of Progression Rates in Early and

Moderately Advanced Glaucoma

Pfizer, Inc.

Duration: 9/19/07–3/31/10

\$452,025

Sophie X. Deng, MD, PhD

A Randomized, Multi-Center, Double-Masked, Placebo-Controlled,

Parallel-Group Safety & Efficacy Study of Azithromycin Ophthalmic Solution

Inspire Pharmaceuticals, Inc.

Duration: 9/3/09–9/2/10

\$54,128

Lynn K. Gordon, MD, PhD

Case-Crossover Study of PDE5 Inhibitor Exposure as a Potential

“Trigger Factor” for Acute Nainon

Pfizer, Inc.

Duration: 6/24/09–6/23/10

\$43,580

Jean-Pierre Hubschman, MD

A Phase I, Single Ascending Dose Trial to Establish the Safety, Tolerability and

Pharmacokinetic Profile of Intravitreal Injections of E10030

Ophthotech Corporation

Duration: 2/26/08–2/25/10

\$65,461

A Phase 1, Ascending Dose and Parallel Group Trial to Establish the Safety,

Tolerability and Pharmacokinetic Profile of Multiple Intravitreal Injections

Ophthotech Corporation

Duration: 4/29/09–4/29/11

\$53,155

A Phase III, MultiCenter, Randomized, Double-Masked Study Comparing

the Efficacy & Safety of 0.5mg & 2.0mg of Ranibizumab

Genentech

Duration: 10/13/09–3/1/13

\$845,625

Total awards for NIH, Clinical, and PI-Initiated Research include indirect cost.

Ralph D. Levinson, MD

An 8 Week, Phase III, Multicenter, Masked, Randomized Trial
 Allergan Pharmaceutical Corp.
 Duration: 4/1/06–12/31/09

\$122,795

Steven Nusinowitz, PhD

A Phase II Study of the Safety and Efficacy of Fenretinide
 Sirion Therapeutics, Inc.
 Duration: 9/1/07–8/31/10

\$31,700

Steven D. Schwartz, MD

Post Juxtasclear Administration of Anecortave Acetate v. Sham Administration in
 Patients with Exudative AMD
 Alcon Research, Ltd.
 Duration: 6/1/04–5/31/10

\$311,980

AGN206207-011: DEX PS DDS Applicator System in the Treatment of Patients with
 Diabetic Macular Edema
 Allergan Sales, LLC
 Duration: 8/25/05–12/31/13

\$1,604,947

TG-MV-006: A Randomized, Placebo-Controlled, Masked, Multicenter Trial
 of Microplasmin Intravitreal Injection for Non-Surgical Treatment of
 Focal Vitreomacular Adhesion
 Chiltern Int.
 Duration: 3/3/09–9/3/10

\$205,683

Age-Related Eye Disease Study II
 Emmes Corp.
 Duration: 1/1/06–12/31/12

\$241,461

FVF4168g: Ranibizumab Injection
 Genentech, Inc.
 Duration: 10/5/07–8/31/12

\$553,500

ADGVPEDF.11.D: Neovascular Age-Related Macular Degeneration
 Gen Vec, Inc.
 Duration: 1/31/03–12/31/09

\$242,948

GV-000.000: Gene Transfer Product Candidates in Clinical Development
 Gen Vec, Inc.
 Duration: 2/27/09–2/26/24

\$39,537

The Diabetic Retinopathy Clinical Research Network
 JAEB Center for Health Research/NEI
 Duration: 6/1/03–12/31/09

\$498,418

A Natural History Study of Macular Telangiectasia
 Lowy Medical Research Institute/NEI
 Duration: 9/1/05–8/31/10

\$185,695

Resolution of Vitreomacular Adhesion (VMA) Associated w/Neovascular
 Age-Related Macular Degeneration (AMD) w/Intravitreal Microplasmin
 ThromboGenics, Inc.
 Duration: 6/30/09–6/29/11

\$42,495

Total awards for NIH, Clinical, and PI-Initiated Research include indirect cost.

Clinical Research Studies

Cornea and External Eye

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: Sophie X. Deng, MD, PhD; and Anthony J. Aldave, MD

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 corneal) transplantation for visual rehabilitation in patients with corneal opacification. Investigators: Anthony J. Aldave, MD; and Gary N. Holland, MD

Eye Infections and Inflammations

Corneal Endothelial Cell Changes in Patients with Uveitis

The purpose of this study is to analyze the involvement of the corneal endothelium in uveitis and the effect of various types of keratic precipitate on the corneal endothelium. Investigators: Abdullah Alfawaz, MD; Anthony J. Aldave, MD; Joseph Caprioli, MD; Gary N. Holland, MD; and Ralph D. Levinson, MD

Experimental Drug for Blepharitis Treatment

This study evaluates whether the topical study drug azithromycin ophthalmic solution, 1% (azithromycin) is safe and effective as a potential treatment for the signs and symptoms of blepharitis. Investigators: Sophie X. Deng, MD, PhD; and D. Rex Hamilton, 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

Longitudinal Studies of the Ocular Complications of AIDS (LSOCA)

LSOCA is a multicenter, National Eye Institute supported, epidemiological study designed to investigate the nature of HIV-related eye diseases since the introduction of potent antiretroviral therapies. More than 2,000 people with AIDS are being followed nationwide. Investigator: Gary N. Holland, 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

Natural Killer Cell Receptor Genes and AIDS-related CMV Retinitis

Institute faculty members are studying why some people with AIDS develop CMV retinitis, an infection of the retina, while others do not. This study aims to determine whether KIR genes, which control natural killer cell activities and other immune functions, differ between HIV-infected individuals who develop CMV retinitis and those who do not, despite similar risk factors. Investigators: Ralph D. Levinson, MD; and Gary N. Holland, MD

Povidone-Iodine for the Treatment of Fungal Corneal Ulcers

This study is evaluating the effectiveness of povidone-iodine 1.25% ophthalmic solution for the treatment of small to medium-sized fungal corneal ulcers compared with an antifungal antibiotic. Investigator: Sherwin J. Isenberg, MD

General Ophthalmology

Clinical Testing of the Tracking Adaptive Scanning Laser Ophthalmoscope (TASLO)

This clinical study evaluates the capabilities of the TASLO in eye health and disease. This may lead to earlier detection of eye disease and a better understanding of anatomy and abnormal conditions of the eye. Investigators: Kevin M. Miller, MD; Michael B. Gorin, MD, PhD; and Michael B. Olson, OD, PhD

New Approaches to Vestibular Testing

Investigators are conducting clinical and laboratory studies of vestibular-ocular reflexes in patients with disorders of the inner ear or cerebellum. This study is sponsored by the National Institute of Deafness and Communicative Diseases. Investigator: Joseph L. Demer, MD, PhD

Glaucoma and Optic Nerve

Ahmed Valve Implant vs. Baerveldt Implant in Glaucoma

Tube shunt devices for glaucoma have received little comparison. This study compares the long-term efficacy and safety of the two most commonly used glaucoma tube shunt surgical devices in clinical settings. Investigators: Joseph Caprioli, MD; Anne L. Coleman, MD, PhD; and Simon K. Law, MD, PharmD

Central Corneal Thickness in Glaucoma Progression

This study is evaluating the correlation between central corneal thickness and progression of visual field defects in a multivariate analysis of patients with open angle glaucoma. Investigator: Joseph Caprioli, MD

Clinical Characteristics of Glaucoma Patients with High Myopia Risk Factor

Research studies have found that myopia is a risk factor for glaucoma; however, detection of glaucoma in patients with high myopia can be very difficult. The purpose of the study is to identify clinical characteristics that are important risk factors for developing glaucoma by comparing patients with high myopia, with and without glaucoma. Investigator: Simon K. Law, MD, PharmD

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

Earlier Intraocular Pressure Control after Ahmed Glaucoma Valve Implantation

The purpose of this study is to evaluate the occurrence rate of the high pressure phase and the final pressure outcomes between subjects treated with glaucoma medications prior to the onset of the high pressure phase and subjects who start glaucoma medications at the onset of the high pressure phase. Investigators: Simon K. Law, MD, PharmD; Joseph Caprioli, MD; Anne L. Coleman, MD, PhD; and JoAnn Giacconi, MD

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

Glaucoma Drainage Devices and Filtering Surgery with Antimetabolites

This study looks at the effect of two surgical procedures—glaucoma implant surgery and filtering surgery with antimetabolites—on the corneal endothelium. It evaluates the possibility of surgical damage to the corneal endothelium, which may result in loss of corneal clarity. Investigators: Anne L. Coleman, MD, PhD; Joseph Caprioli, MD; JoAnn Giacconi, MD; and Simon K. Law, MD, PharmD

Glaucomatous Cupping and Visual Field Abnormalities in Chinese Young Adults

The glaucoma-like syndrome is a condition where patients appear to have signs of glaucoma, but are actually normal. This glaucoma-like syndrome is unusually common in young adult Chinese patients who normally would not be expected to show signs of eye disease. The purpose of the study is to determine the prevalence and characteristics of the glaucoma-like syndrome in Chinese young adults. Investigator: Simon K. Law, MD, PharmD

Ocular Hypertension Treatment Study (OHTS)

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

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: Simon K. Law, MD, PharmD; Joseph Caprioli, MD; Anne L. Coleman, MD, PhD; and JoAnn Giacconi, MD

Lens and Cataract

Comparison of the ARK 650 Autorefractor and Standard Methods

The purpose of this study is to compare the ARK 650 with current clinical techniques, to determine the instrument's accuracy and reliability when used to determine eyeglass prescriptions for pediatric patients. Investigators: David Kirschen, OD, PhD; Joseph L. Demer, MD, PhD; and Sherwin J. Isenberg, MD

Morcher Iris Diaphragm

After obtaining a compassionate use Individual Device Exemption from the U.S. Food and Drug Administration to use the Morcher Iris Diaphragm implant in patients with partial or complete aniridia, the Institute is now evaluating its preliminary effectiveness. The implant is designed to limit the amount of light coming into the eye, similar to a natural iris, reducing symptoms of light sensitivity and glare. Investigators: Kevin M. Miller, MD; and Michael B. Olson, OD, PhD

Ophtec Iris Reconstruction Lens

The Institute is participating in a multicenter clinical investigation designed to evaluate the safety and effectiveness of the Ophtec Model 311 Iris Reconstruction Lens for the treatment of visual disturbances related to the absence of a portion of, or the entire, human iris. Investigators: Kevin M. Miller, MD; and Michael B. Olson, OD, PhD

Macula, Retina, and Vitreous

Air, Perfluoropropane and Sulfur Hexafluoride Gas Disappearance Variability after Vitrectomy

The purpose of this study is to evaluate different gases used in vitrectomy surgeries and to understand why there is variability in the time that the different gases remain in the eye after vitrectomy surgery. Investigators: Jean-Pierre Hubschman, MD; and Steven D. Schwartz, MD

ARC1905 in Combination with Lucentis® to Treat Wet Age-Related Macular Degeneration

This is a phase 1 trial to establish the safety, tolerability, and pharmacokinetic profile of an anti-C5 aptamer in patients with wet age-related macular degeneration. Investigators: Jean-Pierre Hubschman, MD; Allan E. Kreiger, MD; and Tara A. McCannel, MD, PhD

Argus II Retinal Stimulation System Feasibility

The Argus II Retinal Stimulation System is being evaluated for its safety and utility in providing visual function to blind subjects with severe to profound retinitis pigmentosa. Investigators: Steven D. Schwartz, MD; Jean-Pierre Hubschman, MD; Allan E. Kreiger, MD; and David Sarraf, MD

BLOCK ROP Study

Investigators are studying the safety of complete blockage of Vascular Endothelial Growth Factor (VEGF), a factor that stimulates blood vessel growth in the body, to decrease abnormal blood vessel activity for the treatment of retinopathy of prematurity (ROP). Investigators: Steven D. Schwartz, MD; and Jean-Pierre Hubschman, 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: Michael B. Gorin, MD, PhD; Debora B. Farber, PhD, DPhhc; Steven Nusinowitz, PhD; and Maria Carolina Ortube, MD

Dexamethasone Injections in the Treatment of Diabetic Macular Edema

Faculty members are participating in a study to assess the safety and efficacy of 70 mg and 350 mg dexamethasone posterior segment drug delivery systems in the treatment of patients with diabetic macular edema. Investigators: Steven D. Schwartz, MD; Allan E. Kreiger, MD; and Tara A. McCannel, MD, PhD

Dopamine on Age-Related Macular Degeneration

This study investigates the effect of dopamine prescribed for the treatment of Parkinson's disease on dry age-related macular degeneration. Investigators: Steven D. Schwartz, MD; and Jean-Pierre Hubschman, MD

E10030 Eye Injections for Treatment of Wet Macular Degeneration

This study evaluates a new experimental drug, an anti-platelet derived growth factor, alone and in combination with Lucentis®, in patients who have wet macular degeneration. Investigators: Jean-Pierre Hubschman, MD; Allan E. Kreiger, MD; Tara A. McCannel, MD, PhD; and David Sarraf, MD

Efficacy and Safety of Posterior Juxtasceral Administrations of Anecortave Acetate for Depot Suspension

The primary objective of this study is to test the safety and efficacy of Anecortave Acetate for Depot Suspension in arresting the progression of dry age-related macular degeneration (AMD) in patients who are at risk for progressing to wet AMD. Investigators: Steven D. Schwartz, MD; Allan E. Kreiger, MD; Tara A. McCannel, MD, PhD; and David Sarraf, MD

Fenretinide on Age-Related Macular Degeneration

Fenretinide has been shown to reduce the amount of lipofuscin in the eye. Faculty members are investigating the safety and effectiveness of fenretinide as a treatment for people who suffer from age-related macular degeneration. Investigators: Steven D. Schwartz, MD; and Allan E. Kreiger, MD

Genetics of Age-Related Maculopathy (GARM I)

In this multicenter study with the University of Pittsburgh, investigators are evaluating the genetic and environmental risks that contribute to age-related maculopathy (ARM). The study is designed to identify genes that alter susceptibility to ARM and determine the extent to which variants in these genes and other factors affect one's risk of developing the condition. Investigators: Michael B. Gorin, MD, PhD; and Maria Carolina Ortube, MD

Genetics of Age-Related Maculopathy (GARM II)

The purpose of this study is to identify the hereditary and exposure risk factors that lead to the development of ARM in a cohort with a family history of the disease. The study is intended for individuals (49 and older) who have at least one parent with this condition, the spouses or partners of these individuals, and the parents themselves. Investigators: Michael B. Gorin, MD, PhD; and Maria Carolina Ortube, MD

Heavy Metals in Surgically Removed Human Ocular Tissue

Faculty members are examining the concentration of heavy metals in ocular tissue compared to blood concentrations. High volumes of specific heavy metals in the vitreous have been found to cause toxicity in the retina. Information about the concentrations of heavy metals in common vitreoretinal diseases could lead to a new physiopathological approach. Investigators: Jean-Pierre Hubschman, MD; and Steven D. Schwartz, MD

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

Intravitreal Corticosteroids and Laser Photocoagulation for Diabetic Macular Edema

The purpose of this trial is to determine whether intravitreal triamcinolone injections produce greater benefit, with an acceptable safety profile, than macular laser photocoagulation in the treatment of diabetic macular edema. Investigator: Steven D. Schwartz, MD

Investigational Drug for Treatment of Vascular Pigment Epithelial Detachment (vPED)

The purpose of this study is to see if the treatment of a vPED, a complication of macular degeneration, with ranibizumab is safe and effective with the regular dose (0.5 mg) or the high dose (2.0 mg). Investigators: David Sarraf, MD; and Colin A. McCannel, MD

Lucentis® on Autofluorescence Imaging

In this study, investigators are analyzing the effect of Lucentis® injections on autofluorescence imaging in patients with wet age-related macular degeneration. Investigators: Jean-Pierre Hubschman, MD; and Steven D. Schwartz, MD

Microplasmin for the Non-Surgical Treatment of Vitreomacular Adhesion

This study examines the use of microplasmin, injected intravitreally, to relieve the tension between the vitreous and the retina in patients with vitreomacular traction or macular hole. Investigators: Steven D. Schwartz, MD; Jean-Pierre Hubschman, MD; Allan E. Kreiger, MD; and Tara A. McCannel, MD, PhD

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: Steven D. Schwartz, MD; Michael B. Gorin, MD, PhD; Jean-Pierre Hubschman, MD; Allan E. Kreiger, MD; Tara A. McCannel, MD, PhD; and David Sarraf, MD

Ocular Hazards from Currently Available Light Curing Units

The purpose of this study is to assess the potential of currently available curing lights to cause retinal damage to dental personnel, to evaluate the amount of exposure to curing lights by dental personnel, and to assess current levels of retinal degenerative changes in dental workers that are possibly induced by curing lights. Investigators: Jean-Pierre Hubschman, MD; and Steven D. Schwartz, MD

P200CAF Autofluorescence Ultra Wide-field Scanning Laser Ophthalmoscope in Subjects with Vitreoretinal Disease

This study utilizes an ultra wide-field scanning laser ophthalmoscope with autofluorescence (SLO-AF) to take pictures of the retina in a non-invasive way. Images acquired with the SLO-AF are compared with those from other currently available instruments to evaluate the potentially improved resolution for diagnosis of retinal eye diseases. Investigators: Steven D. Schwartz, MD; Jean-Pierre Hubschman, MD; Allan E. Kreiger, MD; and Tara A. McCannel, MD, PhD

Pars Plana Vitrectomy with and without ILM Peel

This study is evaluating and comparing possible differences in the vision, as well as the thickness and shape of the back of the eye, following pars plana vitrectomy surgery with and without Internal Limiting Membrane peeling in patients with complications of diabetic retinopathy. Investigator: Jean-Pierre Hubschman, MD

Rapid, Non-Invasive, Regional Functional Imaging of the Retina

In this study funded by the NIH, Institute investigators are monitoring the responses of the pupil to light as a method for detecting regional losses of function of the retina. The ultimate goal of this research is to develop a simple, noninvasive, rapid method for widespread screening of diabetics in order to identify those who may require medical attention and/or therapy for diabetic retinopathy. Investigators: Michael B. Gorin, MD, PhD; and Maria Carolina Ortube, MD

Resolution of Vitreomacular Adhesion associated with Neovascular Age-Related Macular Degeneration with Intravitreal Microplasmin

Faculty members are evaluating the safety and efficacy of intravitreal injection of Microplasmin on age-related macular degeneration (AMD) with focal vitreomacular adhesion (VMA). Previous research has shown that intravitreal microplasmin may offer physicians a safe agent for resolution of focal VMA in AMD patients without surgery. Investigators: Steven D. Schwartz, MD; and Jean-Pierre Hubschman, MD

Retinopathy in Adult Patients with Congenital Heart Disease

Conducted in cooperation with The Heart Disease Center at UCLA, this study investigates whether adult patients with congenital heart disease have retinal blood vessel abnormalities. Investigators: Irena Tsui, 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 have eye findings as 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; Michael B. Gorin, MD, PhD; and Maria Carolina Ortube, MD

Vitamin Supplementation as Treatment for Dry Age-Related Macular Degeneration

This study explores the effects of oral supplementation of lutein and zeaxanthin and/or omega-3 long chain polyunsaturated fatty acids, called DHA and EPA, on the development of age-related macular degeneration and vision loss. Investigators: Steven D. Schwartz, MD; Michael B. Gorin, MD, PhD; Jean-Pierre Hubschman, MD; Allan E. Kreiger, MD; Tara A. McCannel, MD, PhD; and David Sarraf, MD

Neuro-Ophthalmology

Different Dose Levels of an Injected Drug for Acute Nonarteritic Anterior Ischemic Optic Neuropathy

This study will test whether an experimental drug is safe for humans when it is injected into the eye and will determine the highest dose that can be safely injected. Investigators: Lynn K. Gordon, MD, PhD; and Colin A. McCannel, MD

Exposure as a Potential “Trigger Factor” for Acute NAION

The objective for this study is to examine whether the use of PDE5 inhibitors triggers the onset of acute nonarteritic anterior ischemic optic neuropathy (NAION), a rare visual disorder believed to be a consequence of disruption in optic nerve perfusion, presenting as partial loss of vision. Investigators: Lynn K. Gordon, MD, PhD; Gary N. Holland, MD; and Ralph D. Levinson, MD

Idiopathic Intracranial Hypertension (IIH) with Mild Visual Loss

Several treatments are used to treat IIH, including medication, a supervised dietary program, and surgery. Because these treatments have never been systematically studied, it is not known which are truly effective. This study will test the effectiveness of two treatments of IIH: a supervised dietary program with acetazolamide and a dietary program with a placebo. Investigator: Lynn K. Gordon, MD, PhD

Proteomics and Genomics of Giant Cell Arteritis

The purpose of this research is to improve understanding of the eye problems associated with Giant Cell Arteritis. The role of proteins and genetic mutations are being investigated. Investigator: Lynn K. Gordon, 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: Tara A. McCannel, MD, PhD; Lynn K. Gordon, 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

Ocular Pathology

Clinicocytological Correlation of Ocular Surface Abnormalities

The primary objective of this study is to compare the clinical findings from an ophthalmologist's examination of the eye surface with laboratory findings after impression cytology. Investigators: Ben J. Glasgow, MD; and Richard Casey, MD

Clinicopathologic Correlation of Ocular Surface Abnormalities

This study correlates the clinical observations of the surface of the cornea with the features seen during the pathology examination. Investigators: Ben J. Glasgow, MD; and Richard Casey, MD

Orbital and Ophthalmic Plastic Surgery

Hydrogel Lacrimal Stent Study

Faculty members are evaluating the use of the Hydrogel Lacrimal Stent in dacryocystorhinostomy (DCR) surgery. The new lacrimal stent absorbs fluid from surrounding tissue. This fluid absorbing property allows the stent to be inserted small and expand after insertion, thus minimizing scarring within the nasal cavity. Investigator: Robert A. Goldberg, MD

Pediatrics and Strabismus

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. Investigator: Joseph L. Demer, MD, PhD

Blood Gas Monitoring from the Eye

A new instrument is being tested that measures blood gas parameters from the conjunctiva, as a way to decrease the incidence and severity of retinopathy of prematurity and postnatal hypoxia. Investigator: Sherwin J. Isenberg, MD

Contact Lens Study

The purpose of this study is to identify rates of complications and correlations to modality of wear, care system, hygiene, or other factors associated with contact lens complications. Investigators: Sharon Y. Lee, OD; Bartly J. Mondino, MD; and Barry A. Weissman, OD, PhD

Genetic and Anatomic Basis of the Fibrosis Syndrome

The long-term goal of this National Eye Institute-sponsored project is to determine the cause of congenital fibrosis of the extraocular muscles, a rare, inherited condition resulting in strabismus and drooping eyelids. This collaborative study is being conducted with investigators from Children's Hospital in Boston. Nerve versus muscular causes of the syndrome are being studied in individual families around the country and linked to the causal genes through molecular genetics testing of blood samples. Investigator: Joseph L. Demer, MD, PhD

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

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