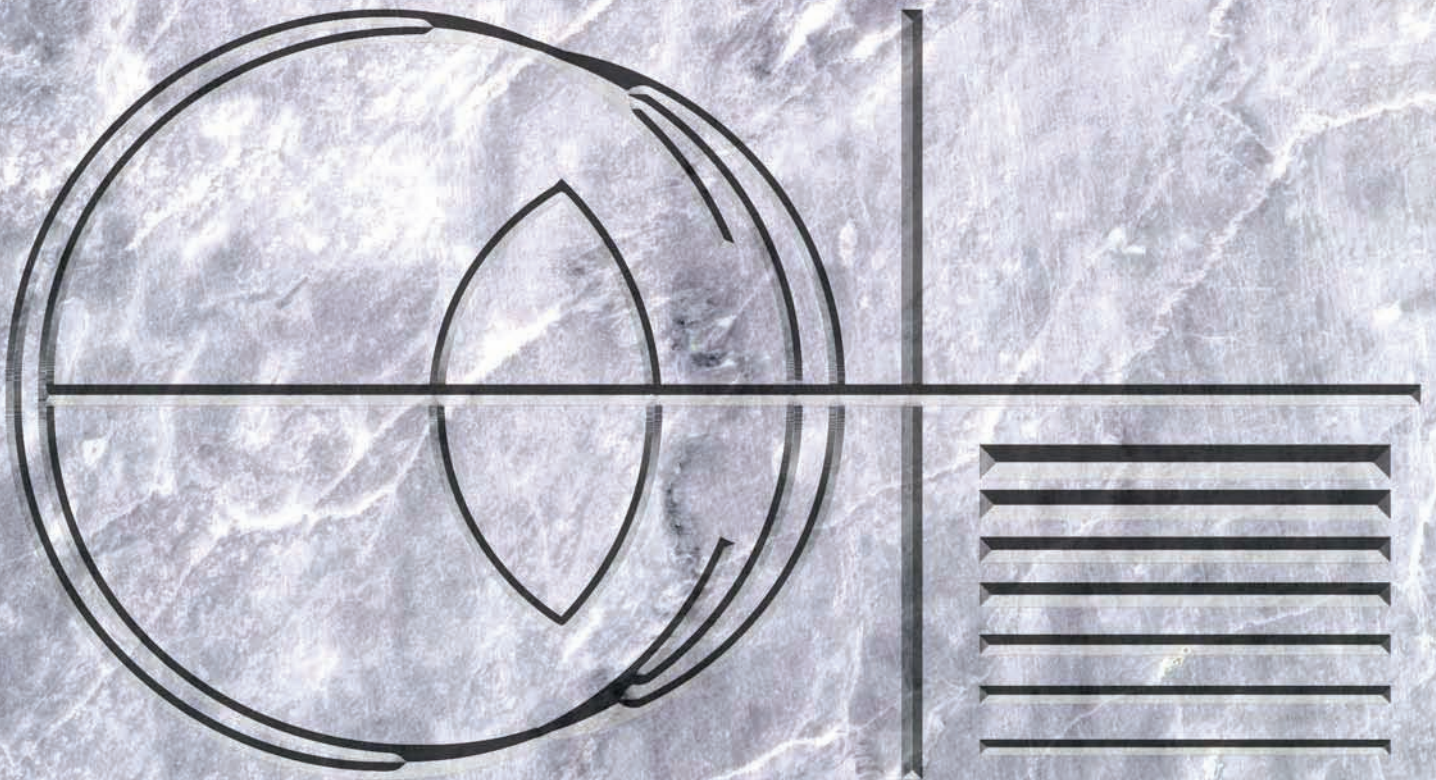


Annual Report 2006-2007

Jules Stein Eye Institute

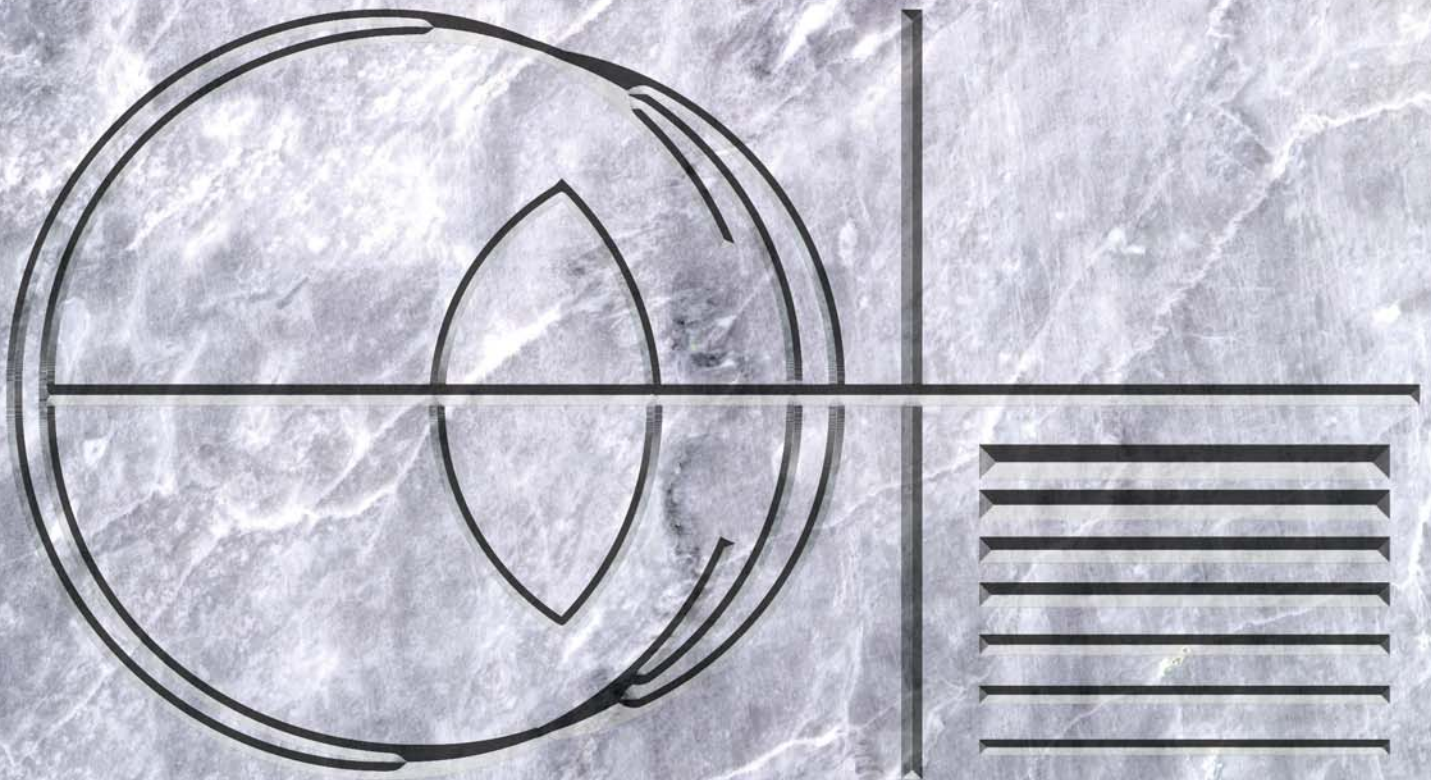


Annual Report 2006-2007

Jules Stein Eye Institute

University of California, Los Angeles

David Geffen School of Medicine at UCLA



Jules Stein Eye Institute

Annual Report 2006–2007

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

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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



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Chairman and CEO,
Rising Realty Partners, LLC
2004–present



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1995–present



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President,
Gerald Oppenheimer
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1992–present



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Publisher and Editor,
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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
Chief Executive Officer,
The Wasserman Foundation
1998–present

IN MEMORIAM – ROBERT H. AHMANSON

JSEI staff, faculty, and trustees were greatly saddened with the passing of Robert H. Ahmanson on September 1, 2007, at the age of 80. Mr. Ahmanson became a member of the Board of Trustees of the Jules Stein Eye Institute in 1992 and served loyally and faithfully in this capacity for 15 years. Through The Ahmanson Foundation, he and his family supported JSEI since 1969 and most notably created the UCLA Center for Eye Epidemiology and the Ahmanson Chair in Ophthalmology. **Bartly J. Mondino, MD**, JSEI Director, stated, “Bob was an incredible friend to the Institute and on a personal level, the advice and support he provided to me over the years were invaluable and greatly appreciated. He will be sadly missed.”

Born in Omaha, Nebraska, Mr. Ahmanson came to Los Angeles in 1944. He earned a Bachelor’s Degree in Business Administration from UCLA in 1949 and met Kathleen, his wife of 52 years. He went to work for his uncle, financier Howard F. Ahmanson, at H. F. Ahmanson & Co., and Home Savings and Loan Association. Central to his work at the company was oversight of construction of the branch offices in Southern California; the many edifices which still stand today are a testament to his care and dedication. Since 1974, he served as Trustee and President of The Ahmanson Foundation.

In addition to his involvement with JSEI, Mr. Ahmanson also served as trustee of numerous organizations including the Brain Mapping Medical Research Organization, Research to Prevent Blindness, Los Angeles County Museum of Art, and the Marlborough School. His numerous awards include honorary doctorates from the Hebrew University of Jerusalem, Pepperdine University, Art Center College of Design, and Creighton University. In 1986, he received the UCLA Gold Medal in recognition for his leadership in the finance industry, devotion to philanthropy, and outstanding support of the University.



He was an avid sailor and had a great fondness for organ music, classic cars, and radio, including membership in the Pacific Pioneer Broadcasters.

Mr. Ahmanson is survived by Mrs. Ahmanson, sons William and Robert, daughter Karen Hoffman, and seven grandchildren.

Steven D. Schwartz, MD, Chief of JSEI’s Retina Division and the Ahmanson Professor of Ophthalmology, is a long-time family friend of the Ahmansons and spoke at the memorial celebration on September 14, 2007, presided over by Cardinal Roger Mahony at the Cathedral of Our Lady of the Angels: “Bob led a life of exemplary conduct and virtue: A truly attendant and generous spirit who not only shared his personal support with individuals, but who helped build every sector of our amazing city. I will miss Bob not only because he was an inspirational local visionary and philanthropic leader, but because he was a dear friend.”

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



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

Annual Report 2006-2007

Jules Stein Eye Institute

Highlights

**DEPARTMENT OF OPHTHALMOLOGY/
UCLA SCHOOL OF MEDICINE**



Dear Friends,

I am pleased to share these highlights of the 2006–2007 academic year, which serve to strengthen our commitment to preserve sight and prevent blindness. This year we are proud to present a new faculty member, Michael B. Gorin, MD, PhD, who was appointed to the Harold and Pauline Price Chair. We congratulate the Jules Stein Eye Institute Board of Trustees on its 30th Anniversary, and we are pleased to introduce Andrea Rich, PhD, a new member to the board. Founding Member of the Jules Stein Eye Institute, Michael O. Hall, PhD, and the Director of the UCLA Eye Trauma and Emergency Center, Marc O. Yoshizumi, MD, retired this year. We thank them for their loyal service and lasting contributions to vision science and ophthalmology.

During the year, several of our faculty and residents were awarded special honors. Important research grants led by senior faculty were renewed by the National Institutes of Health, and new grants were awarded to young investigators.

Philanthropic gifts to the Institute were highlighted by the establishment of the Daljit S. and Elaine Sarkaria Stargardt Macular Dystrophy Research Fund, a pledge from Jerome and Joan Snyder for the proposed establishment of an administrative chair for the Residency Program Director, the creation of the first endowed chair for the Division of Orbital and Ophthalmic Plastic Surgery by Karen and Frank Dabby, a significant bequest from the J. Richard and Ardis M. Armstrong Trust, and several generous contributions made in honor of friends and family.

We are appreciative of these opportunities afforded to faculty and students and share the belief that we will contribute to a future full of promise.

Sincerely,

A handwritten signature in cursive script that reads "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 derived from their accomplishments and contributions. They give invited lectures around the world; they actively participate in influential professional and community organizations; and they serve as editors and writers 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 visual science and a new term chair holder was announced.

JSEI Board of Trustees 30th Anniversary

From the commencement of scientific activities in 1966, the growing program at JSEI called attention to the need for an independent Board of Trustees to provide guidance and oversee the management of JSEI. This body was established on September 28, 1977, as a result of an agreement between Dr. Jules Stein and The Regents of the University of California. Its six initial members were: **Judge W. Matthew Byrne, Jr., Mr. David May II, UCLA Chancellor Franklin D. Murphy, Jules Stein, MD, Bradley R. Straatsma, MD, and Mr. Lew Wasserman.**

Under the terms of the agreement, the JSEI Board of Trustees has at least six but no more than nine members, one of whom is a member of the Stein family. Dr. Stein, a founding trustee, served on the Board from 1977 until his death in 1981. Maintaining the continuity of participation envisioned by the Stein family, **Mrs. Doris Stein** succeeded him on the Board until her death in 1984. **Ms. Katrina vanden Heuvel**, granddaughter of Dr. and Mrs. Jules Stein and daughter of **Ms. Jean Stein**, has served on the Board since 1984. Joining Ms. vanden Heuvel are current trustees **Bartly J. Mondino, MD, Ronald L. Olson, Esq., Mr. Gerald O. Oppenheimer, Andrea L. Rich, PhD, Nelson C. Rising, Esq., George A. Smith, Esq., and Mr. Casey Wasserman.**



The JSEI Founding Board of Trustees: (clockwise from left) David May II, Chancellor Franklin Murphy, Lew Wasserman, Dr. Bradley Straatsma, Judge Matthew Byrne, Jr., and Dr. Jules Stein

JSEI staff, faculty, and trustees were greatly saddened with the passing of Robert H. Ahmanson on September 1, 2007, at the age of 80. Mr. Ahmanson became a member of the Board of Trustees of the Jules Stein Institute in 1992 and served loyally and faithfully in this capacity for 15 years.

Each member brings unique experiences and perspectives. Collectively, their invaluable contributions range from fiscal planning and the allocation of funds to recommendations for the facilities expansion program, including the planned construction of the new Edie and Lew Wasserman Eye Research Center.

JSEI faculty and staff congratulate the Board of Trustees on its 30th Anniversary and extend a heartfelt thank you to its members for providing valuable leadership and support of JSEI's programs during the past three decades.

Andrea L. Rich, PhD, Joins JSEI Board of Trustees



Dr. Andrea Rich served as President, Chief Executive Officer and Director of the Los Angeles County Museum of Art (LACMA) from 1999 to 2005 and as President and Chief Executive Officer of LACMA from 1995 to 1999. Previously, she served as Executive Vice Chancellor and Chief Operating Officer of the University

of California, Los Angeles (UCLA), from 1991 to 1995 and was a founding director of the Private Bank of California.

Dr. Rich's career at UCLA spanned 34 years. As a member of the UCLA faculty, she was awarded the Distinguished Teaching Award and was a leader in efforts to improve undergraduate education, renovate instructional facilities, and restructure academic programs for greater financial efficiencies and academic quality.

Born in San Diego, California, Dr. Rich is an alumna of UCLA, having earned a Bachelor's degree in 1965, a Master of Arts degree in 1966, and a Doctor of Philosophy degree in 1968.

She is very active in the non-profit community as well as the profit sector. Dr. Rich is currently serving on several community boards including: the Board of Trustees of Claremont McKenna College, the Board of Trustees of La Plaza de Arte y Cultura, and the Board of Governors of the UCLA Medical Sciences. Her involvement in the profit sector includes: serving as director of the Mattel Corporation, the Private Bank of California, and the Douglas Emmett Real Estate Investment Trust. Dr. Rich is also the author of two books, has won numerous honors, and has lectured and been published extensively.



Dr. Michael Hall and his wife Jill enjoy the festivities at his retirement reception.

JSEI Founding Member Retires

Michael O. Hall, PhD, Professor of Ophthalmology in the Vision Sciences Division and Founding Member of the Jules Stein Eye Institute has retired after more than 40 years of service.

Dr. Hall began his career at UCLA after earning his degree in Biochemistry at the University of Natal in South Africa. He earned his Doctor of Philosophy degree in Physiological Chemistry at UCLA in 1961. He continued at the University, first as an Assistant Professor of Ophthalmology and Biochemistry, and later as Professor of Ophthalmology and Biochemistry.

Dr. Hall was a founding member of the Jules Stein Eye Institute (1965), and served as Associate Director of the Institute for several years (1971-1972; 1974-1975; 1984-1985). He also chaired or co-chaired numerous research, fellowship training, and educational program committees during his many years at the Institute.

Dr. Hall's research has focused on retinal biochemistry, retinal degeneration, cellular interaction and metabolism of retinal pigment epithelium, and he has authored many papers on these topics. His illustrious career has taken him to various regions of the world; he has been a visiting fellow, professor, and lecturer in England, South Africa, and Australia.

The Jules Stein Eye Institute and UCLA paid tribute to Dr. Hall at a reception in The Adam Room on October 5, 2006. The faculty and staff thank him for his years of service and lasting contributions to vision science. We wish him the best on his well-deserved retirement.



Dr. Yoshizumi was presented with a token of appreciation in recognition of his 29 years of service to UCLA.

Aloha Dr. Yoshizumi!

Marc O. Yoshizumi, MD, Professor of Ophthalmology, Director of the UCLA Eye Trauma and Emergency Center, and Director of the Jules Stein Eye Institute's Medical Student Education in Ophthalmology Program, has retired after 29 years of dedicated service to UCLA.

Born in Honolulu, Hawaii, Dr. Yoshizumi received his Medical Degree at Yale University School of Medicine in 1970 and completed an internship in Medicine at the Johns Hopkins University in Baltimore, Maryland. He was awarded the Knight Memorial Fellowship in Nervous and Mental Diseases at Oxford University, England, and a fellowship in neurology and neuropathology in the Department of Neurology at the University of California, San Francisco. He completed his residency in ophthalmology at the Harvard Medical School and Massachusetts Eye & Ear Infirmary in Boston, Massachusetts, staying on to pursue a fellowship in vitreoretinal diseases and surgery under the mentorship of **Charles Schepens, MD**, "the father of modern retina surgery."

Dr. Yoshizumi joined the Jules Stein Eye Institute (JSEI) faculty in 1978, and throughout his distinguished career, served on numerous Department and campus committees including the UCLA Academic Senate (1986-2007). Since 1982, Dr. Yoshizumi has been Director of the UCLA Eye Trauma Unit. He became Chairman of the Peer Review and Quality Assessment Committee of the UCLA Department of Ophthalmology in 1990 and he directed JSEI's Medical Student Education in Ophthalmology program since 1991.

Dr. Yoshizumi's research efforts have focused on retinal detachment, vitreoretinal surgery, diabetic retinopathy, macular degeneration,

endophthalmitis, and eye trauma. He authored numerous publications and lectured and participated in courses throughout the United States and around the world.

Friends, faculty, students, and patients paid tribute to Dr. Yoshizumi at a retirement dinner in The Adam Room on February 15, 2007, and thanked him for his loyal service and lasting contributions to ophthalmology and medical student education at UCLA. Dr. Yoshizumi retired to his home in Honolulu, Hawaii.



(Left to right) Timothy Jones, President, The Louis and Harold Price Foundation, Bonnie Vitti, Dr. Michael Gorin, and Dr. Lisa Beshkov. Both Bonnie and Lisa are the granddaughters of Pauline and Harold Price and serve on the Price Foundation Board.

The Harold and Pauline Price Chair in Ophthalmology

Michael B. Gorin, MD, PhD, Professor of Ophthalmology at the Jules Stein Eye Institute, has been appointed as the Harold and Pauline Price Chair in Ophthalmology. Dr. Gorin joined the JSEI faculty in September 2006 and will divide his time among patient care within the Retina Division, research into the genetics of inherited eye disease, and medical student education.

The Price Chair was established in 2000 with a generous gift by The Louis and Harold Price Foundation. The late Pauline and Harold

Price were loyal supporters of JSEI for more than 40 years. Through the Price Foundation, Mr. and Mrs. Price also created the Price Retina Research Fund and the Harold and Pauline Price Fellowship. The Price Foundation made an additional pledge in 2004 to convert the Price Chair, originally established as a five-year term chair, to a permanent chair. Dr. Gorin will continue to be the Harold and Pauline Price Professor of Ophthalmology while on faculty at JSEI.

The Price family's dedication to the vision sciences at UCLA continues with daughter **Linda Vitti-Herbst** and granddaughters, **Lisa Beshkov, PhD**, and **Bonnie Vitti. Bartly J. Mondino, MD**, JSEI's Director, stated, "Harold and Pauline would be so proud that their long-standing connection with the Jules Stein Eye Institute now spans three generations."

On February 22, 2007, which would have been Harold Price's 99th birthday, members of The Louis and Harold Price Foundation joined faculty from the Retina Division to congratulate Dr. Gorin on this highly prestigious position. Dr. Mondino presented Dr. Gorin and the Price Foundation with the David Geffen School of Medicine at UCLA recognition "chairs" (created by The Franklin Mint).

JSEI Members Assume AUPO Leadership Positions

The Association of University Professors of Ophthalmology (AUPO) represents departments of ophthalmology nationwide, as well as Canada. The organization provides support and information to departmental chairs and other faculty members, promotes excellence in ophthalmic education and vision research, and promotes excellence in eye care in order to ensure the best possible vision for the public.

Three members of the Jules Stein Eye Institute were appointed to key posts within the AUPO. Chairman of the UCLA Department of Ophthalmology and Director of the Jules Stein Eye Institute, **Bartly J. Mondino, MD**, is the current AUPO Executive Vice-President. Professor of Clinical Ophthalmology, **Anthony C. Arnold, MD**, serves as the President of the AUPO Program Directors Council, which advances ophthalmology residency education on a national level. Finally, JSEI Chief Operating Officer, **Jonathan Smith**, serves as the President of the AUPO University Administrators of Ophthalmology, which promotes effective and professional administrative support of medical education, research, and patient care, particularly as it concerns departments of ophthalmology.

(Left to right) Mr. Jonathan Smith, Dr. Bartly Mondino, and Dr. Anthony Arnold were appointed to key posts within AUPO.



Dolly Green Professor of Ophthalmology and Professor of Neurobiology at UCLA, **Dean Bok, PhD**, received the Paul Kayser International Award in Retina Research at the XVII International Congress for Eye Research held in Buenos Aires, Argentina, on October 29 – November 3, 2006. The award included a prize of \$50,000 and a Plenary Lecture entitled, “The Retinoid (visual) Cycle in Health and Disease.”



Joseph Caprioli, MD, David May II Professor of Ophthalmology, received an Editors' Choice Award from the Editors-in-Chief of the three major clinical ophthalmology journals: *American Journal of Ophthalmology*, the *Archives of Ophthalmology* and *Ophthalmology*, for his paper “Trabeculectomy with Mitomycin C in Pseudophakic Patients with Open-Angle Glaucoma: Outcomes and Risk Factors for Failure.” The paper was presented at the American Academy of Ophthalmology (AAO) in Las Vegas, Nevada, on November 11–14, 2006.



Assistant Professor of Ophthalmology and Director of the UCLA Laser Refractive Center, **D. Rex Hamilton, MD**, received the best paper of session award for, “Keratorefractive: Flap Creation, Lasik Using a Microkeratome Versus a Femtosecond Laser: Determination of Differences in Corneal Biomechanical Effects,” at the American Society of Cataract and Refractive Surgery meeting in San Diego, California, on April 27–May 2, 2007. He was also elected as a Fellow to the American College of Surgeons.



Laraine and David Gerber Professor of Pediatric Ophthalmology **Sherwin J. Isenberg, MD**, a former Heed Fellow, received the prestigious Heed Award in recognition of his contributions to ophthalmology. The Award was presented at the annual AAO meeting in Las Vegas, Nevada, on November 11–14, 2006.



Associate Professor of Ophthalmology and member of the Glaucoma Division at the Jules Stein Eye Institute, **Simon K. Law, MD, PharmD**, received the 2007 Dennis W. Jahnigen Career Development Scholars Award of the American Geriatrics Society. The two-year career development award is a tribute to the late Dennis W. Jahnigen, a leading educator and geriatrician. It provides support for faculty to initiate and ultimately sustain a career in research and education in the geriatrics aspects of their discipline. The announcement was made in April 2007.



Kevin M. Miller, MD, Kolokotronis Professor of Ophthalmology at the Jules Stein Eye Institute, received the American Academy of Ophthalmology 2006 Senior Achievement Award at the AAO annual meeting in Las Vegas, Nevada, on November 11–14, 2006. The Award was presented in recognition of his significant contributions to the Academy, its scientific and educational programs, and to ophthalmology.



Bradley R. Straatsma, MD, JD, Professor Emeritus of Ophthalmology and Founding Director of the Jules Stein Eye Institute, received the Prince Abdulaziz Ahmed Al-Saud Prevention of Blindness Award at the IX Congress of the Middle East African Council of Ophthalmology in Dubai, United Emirates on March 29, 2007. Dr. Straatsma, who is founder and president of the International Council of Ophthalmology Foundation, was honored with the award for his contributions to the prevention of blindness in developing countries. He also received the Harry S. Gradle Teaching Medal at the Pan-American Congress of Ophthalmology in Cancun, Mexico, on May 21, 2007, in recognition of years of exemplary service in the area of ophthalmic teaching in the United States and abroad.



RESEARCH

Research is a key component of the Institute's academic mission, and a high priority for faculty who have often devoted 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 2006–2007, faculty members received important awards from both public and private organizations. Major new grants and grant renewals will enable faculty to substantially further ongoing vision science investigations that have shown promise. New clinical trials have direct application to some of the country's most common ophthalmic problems.

Macular Degeneration Research

Michael B. Gorin, MD, PhD, Harold and Pauline Price Professor of Ophthalmology, received grants from the National Eye Institute and American Health Assistance Foundation to investigate the genetics of age-related maculopathy (ARM), one of the leading causes of irreversible blindness in the United States and other industrialized nations. It has been found that heredity strongly contributes to the risk of developing this condition. The study will investigate the genetic variations that contribute to ARM. Findings may lead to the development of new preventative therapies that can slow or halt the development of this disease.

Preliminary research by Anne L. Coleman, MD, PhD, Frances and Ray Stark Professor of Ophthalmology and Professor of Epidemiology, and Robin L. Seitzman, PhD, suggests that bone disease and age-related macular degeneration (AMD) in women may have common genetic risk factors. They received a grant from the American Health Assistance Foundation to study whether genes related to bone metabolism and expressed in eye tissues correlate with AMD in woman 75 years of age and older, and whether genetic effects may be modified by environmental risk factors for AMD, such as smoking, nutritional factors, or reproductive hormone exposures.

Vision of Children Foundation Grant

Debra B. Farber, PhD, DPhhc, Karl Kirchgessner Professor of Ophthalmology, and Alex Yuan, MD, PhD, EyeSTAR Resident, received a grant from the Vision of Children Foundation to study stem cell microvesicles – that may play a role in intercellular communication – as a gene delivery tool for the eye.

New Clinical Trials

Ben Glasgow, MD, Edith and Lew Wasserman Professor of Ophthalmology; Lynn Gordon, MD, PhD; Bradley Straatsma, MD, JD; and Tara Young, MD, PhD are studying ocular melanoma tumor tissue in order to identify key molecular and genetic features that could help predict those patients who may be at high risk for metastasis. A sample of tumor tissue will be removed at the time of radioactive plaque placement surgery or tumor resection and used for molecular and genetic testing. Patients will be informed of the results and, depending on the outcome, will have increased monitoring to detect metastasis at the earliest possible stage and the opportunity to participate in clinical trials of experimental treatments that might not normally be offered to patients with ocular melanoma.

Michael Gorin, MD, PhD, Harold and Pauline Price Professor of Ophthalmology; Debra Farber, PhD, DPhhc, Karl Kirchgessner Professor of Ophthalmology; Steven Schwartz, MD; and Maria Carolina Ortube, MD are conducting a natural history study of Stargardt disease, a disease which causes childhood blindness. While no treatment is currently available, the Institute is identifying and characterizing Stargardt patients and documenting their disease state using a broad range of clinical and functional tests. A major goal of this study is to find better ways to measure progression of the condition for future clinical trials that will test new therapies. Investigators will also look for the variations in the genes that are responsible for causing Stargardt disease and related conditions. Subjects are given the option of having their information entered into a database to be contacted should a treatment become available.

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, and applaud the efforts of our faculty members who have traveled across the country and abroad to present prestigious lectureships in ophthalmology.

New Faculty

Michael B. Gorin, MD, PhD, was appointed Professor of Ophthalmology in the Retina and Vision Science Divisions, and Harold and Pauline Price Chair in Ophthalmology. Dr. Gorin obtained his Medical and Doctor of Philosophy degrees from the University of Pennsylvania at Philadelphia and completed his internship at the Center for Health Sciences at UCLA. He stayed on at UCLA for postdoctoral fellowship and ophthalmology residency training at the Jules Stein Eye Institute, and then finished a fellowship in Medical Retina and Genetics at Moorfields Eye Hospital in London, England.



In 1990, Dr. Gorin began his academic career as Assistant Professor of Ophthalmology and Human Genetics at the University of Pittsburgh School of Medicine. He has the unique distinction of having been interim chair for both a basic science department (Department of Human Genetics at the Graduate School of Public Health) and a clinical department (Department of Ophthalmology in the School of Medicine) at the University of Pittsburgh. More recently, he served as the Assistant Vice Chancellor for Strategic Initiatives for the

University of Pittsburgh Schools of the Health Sciences and Professor of Ophthalmology, Human Genetics and Bioengineering, from which positions he was recruited to the Jules Stein Eye Institute.

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. His research group was the first to identify genetics regions that contribute to macular degeneration, which then led to the identification of several macular degeneration genes by multiple investigators. He also investigates monogenic disorders such as hereditary retinal degenerations, glaucoma, cataracts, and ocular syndromes.

As a full-time faculty member, Dr. Gorin divides his time between patient care for diseases of the retina, research into the genetics of inherited eye disorders, and training young ophthalmologists.

Prestigious Lectureships

Dolly Green Professor of Ophthalmology and Professor of Neurobiology at UCLA, **Dean Bok, PhD**, presented the keynote address, "The Retinal Pigment Epithelium: Its Role in Inherited Retinal Diseases," at the 1st International Congress of the International Society for Ocular Cell Biology at Homerton College, in Cambridge, England, on September 6, 2006.



Anne L. Coleman, MD, PhD, Frances and Ray Stark Professor of Ophthalmology at the Jules Stein Eye Institute, presented the 14th Arthur Light, MD Memorial Lecture in Ophthalmology at Loyola University Medical Center, Stritch School of Medicine, in Chicago, Illinois, on September 6, 2006. The subject of the lecture was, "Predicting Glaucomatous Progression with Imaging."



Karl Kirchgessner Professor of Ophthalmology at UCLA **Debra B. Farber, PhD, DPhhc**, presented three prestigious lectures this year. She presented “Mutations in Two Genes Causing Retinal degeneration in Mice, Gnb1 and Sp4, may be Associated with Digenic Retinitis Pigmentosa” at the XII International Symposium on Retinal Degeneration on October 23-28, 2006. She also presented “Are G-alpha i Proteins Downstream Signaling Molecules for Oa1 in Ocular Albinism?” at the XVII International Congress of Eye Research in Buenos Aires, Argentina on October 29-November 3, 2006, and “A Novel Zinc Finger Protein in Cone Photoreceptors of Human Retina” at the Annual Association for Vision in Research and Ophthalmology meeting in Ft. Lauderdale, Florida on May 6-10, 2007.



Laraine and David Gerber Professor of Pediatric Ophthalmology **Sherwin J. Isenberg, MD**, presented the second Eugene R. Folk Memorial Lecture at the Pediatric Ophthalmology Symposium at the University of Illinois, in Chicago, Illinois, on September 27, 2006. The title of the lecture was, “Long Term Results of Strabismus Surgery.” He also delivered the Distinguished Alumnus Lecture entitled, "Neonatal Development of the Eye" at the Children's Hospital, National Medical Center of George Washington University School of Medicine in Washington DC, on June 26-27, 2007.



Director of the Jules Stein Eye Institute and Chair of the UCLA Department of Ophthalmology, **Bartly J. Mondino, MD**, presented three named lectures at academic centers. He presented the Ulrich Ollendorff Memorial Lecture, “Scleritis,” at the Harkness Eye Institute, Columbia University, New York, New York, on April 26, 2007. He also gave the 4th Stuart Brown Lecture at the Shiley Eye Center, University of California at San Diego, La Jolla, California, on June 2, 2007, and the 15th Gifford Lecture at the University of Nebraska Medical Center, Department of



Ophthalmology and Visual Sciences, Omaha, Nebraska, on June 27, 2007. The title of these lectures was, “Pseudomonas Infections of the Anterior Segment.”

Annual JSEI Clinical and Research Seminar

The JSEI Clinical and Research Seminar was held on May 18-19, 2007, in the RPB Auditorium. Sponsored by the Department of Ophthalmology Association, the seminar featured named lectures and presentations by faculty members, residents, and clinical and basic science research fellows. The conference provided an expanded forum for discussion and collaboration of emerging clinical and basic science research.

The 38th Jules Stein Lecture, “Changes in Strabismus Over Time: Why and How,” was presented by David L. Guyton, MD, Zanvyl Kreiger Professor of Ophthalmology at the Johns Hopkins University School of Medicine. The fifth Bradley R. Straatsma Lecture, “Retinal Remodeling,” was presented by Robert E. Marc, PhD, Mary H. Boesche Professor of Ophthalmology at the University of Utah and Director of Research for the John A. Moran Eye Center. The fifth Thomas H. Pettit Lecture, “Corneal and Refractive Surgery Using the Femtosecond Laser,” was presented by Edward E. Manche, MD, Director of Cornea and Refractive Surgery at the Stanford Eye Laser Center and Associate Professor of Ophthalmology at the Stanford University School of Medicine.



(From left) Dr. Bartly Mondino with Thomas Pettit Lecturer Dr. Edward Manche, Jules Stein Lecturer Dr. David Guyton, and Bradley Straatsma Lecturer Dr. Robert Marc

Excellence in Teaching

Among the many honors acknowledged at the Clinical and Research Seminar was the Irvine Prize, given in honor of S. Rodman Irvine, MD, a distinguished clinician, teacher, investigator, and lecturer. The prize was established in 1990 to recognize excellence among Department of Ophthalmology faculty. **Donald I. Goldstein, MD** was awarded the honor this year and added to the list of eminent physicians, clinicians, and educators who have received the prize.

Senior Honor Awards were presented to four faculty members who have been members of the UCLA Department of Ophthalmology for at least 25 years and have a long record of service to the teaching programs of UCLA and its affiliated hospitals. The recipients of the award for 2007, a Tiffany and Company crystal apple, were volunteer faculty members **William P. Chen, MD, FACS** and **Teresa O. Rosales, MD**.

The Faculty Teaching Award was developed in 1995 to recognize a faculty member for an outstanding job as teacher and mentor to the residents with contributions extending over and above the call of duty of a faculty member. This year the JSEI residents presented the award to **Uday Devgan, MD**, Chief of the Division of Ophthalmology at the Olive View-UCLA Medical Center.



Former Chair Dr. Bradley Straatsma (right) congratulates Senior Honor Award recipient Dr. William Chen with wife Lydia



Dr. Uday Devgan (fourth from right), who received the outstanding faculty teaching award, is shown with graduating residents Drs. Hajir Dadgostar, Peter Kappel, Patty Lin, David Goldenberg, Louis Chang, Tien-An Shih, and Eddy Nguyen



Drs. Bartly Mondino (left) and Michael Gorin (right) present Dr. Goldstein with the Irvine Prize

PHILANTHROPY

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. This year, \$8.7 million was raised to support JSEI's sight-saving endeavors. This commitment and dedication from more than 400 donors allows faculty to elevate the Institute to the next level of achievement in terms of eradicating blindness and preserving vision. Highlights from this past year include the establishment of the **Daljit S. and Elaine Sarkaria Stargardt Macular Dystrophy Research Fund**, a pledge from **Jerome and Joan Snyder** for the proposed establishment of an administrative chair for the Residency Program Director, the creation of the first endowed chair for the Division of Orbital and Ophthalmic Plastic Surgery by **Karen and Frank Dabby**, a significant bequest from the **J. Richard and Ardis M. Armstrong Trust**, and several generous contributions made in honor of friends and family.

The Daljit S. and Elaine Sarkaria Stargardt Macular Dystrophy Research Fund

Drs. Daljit S. and Elaine Sarkaria made a generous \$1,025,000 pledge to further research in Stargardt macular dystrophy, the most common form of inherited juvenile macular degeneration. Affecting one in 10,000 children, this disease typically begins with six-to-12-year-old youngsters experiencing dark adaptation problems and central vision loss and leads to legal blindness. Daljit and Elaine's daughter **Gita Sarkaria-Englert, DDS**, and son-in-law **Jon Englert, DDS**, encouraged the family's support of a planned five-year study that promises to yield significant new information that will ultimately benefit future generations of Stargardt disease patients.

Several clinicians and basic scientists at the Jules Stein Eye Institute are engaged in innovative studies to understand the biological basis of vision loss in patients with Stargardt disease. Generous support from the Sarkarias will allow investigators to expand the translational component of their study and test therapies to halt or slow the progressive vision loss. **Bartly J. Mondino, MD**, Director of the Jules Stein Eye Institute, stated that, "Our faculty are at the forefront of Stargardt disease research. The magnificent investment from the Sarkaria family will allow for the advancement of this important work from the laboratory bench to a clinical trial and bring us closer to developing and applying new therapies for patients." Since this devastating disease is primarily inherited as an autosomal recessive disorder, in which both parents are carriers of the Stargardt gene, gene replacement strategies will be a primary focus of the investigations.

Daljit Sarkaria, a retired pathologist, completed his residency training at UCLA after receiving his Medical Degree in 1957 from New York State University at Buffalo and Doctoral degree from Cornell



(From left) Drs. Dean Bok, Michael Gorin, and Steve Nusinowitz discuss research in Stargardt macular dystrophy

Joan and Jerome Snyder

University in 1949. Elaine Sarkaria received her Doctorate in Education from UCLA in 1973. The couple are generous donors to the David Geffen School of Medicine at UCLA and most recently established the Daljit S. and Elaine Sarkaria Clinical Research and Biomarkers Center at UCLA.

The Jerome and Joan Snyder Chair in Ophthalmology **Jerome and Joan Snyder**, dedicated supporters of the Jules Stein Eye Institute and UCLA for more than 20 years, have made a generous \$1-million pledge to establish the Jerome and Joan Snyder Chair in Ophthalmology. This endowment will 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. These talented and skilled residents from the best medical schools across the country make significant contributions to vision science while at UCLA and grow into leadership positions in ophthalmology once they graduate.

Jerome Snyder is the founder and senior partner of the J.H. Snyder Company, one of the largest privately held real estate development firms in Los Angeles. Since 1949, his company has had nearly three-million feet of retail and entertainment developments, more than two-million square feet of premier-class office space, and more than 41,000 homes and residential units to its credit. As of January 2005, the firm had approximately \$1.5 billion worth of projects in planning and construction including mix-use retail, residential, and multi-family properties throughout Southern California. In addition to his steadfast involvement in the Jules Stein Eye Institute, Mr. Snyder has generously supported UCLA's Graduate School of Architecture and Urban Planning. Joan Parker Snyder and her family have been long-time friends of the Institute as well.

This endowment will enable the Residency Program Director to continue to advance the curriculum in order to train highly competent and ethical physicians, who then become first-class comprehensive ophthalmologists, subspecialists, and scientists. This important resource will allow the Institute to continue its leadership in residency education. Bartly J. Mondino, M.D., Director of the Jules

Stein Eye Institute, declared, "We are so thrilled with Joan and Jerry's commitment to our residency training program. This exceptional source of funding is guaranteed to yield great future rewards for UCLA in particular and vision science in general."

The Karen and Frank Dabby Chair in Ophthalmology **Karen and Frank Dabby** have established the Karen and Frank Dabby Chair in Ophthalmology, an endowed term appointment to support the activities of a distinguished faculty member in the area of orbital disease. The orbit protects the sensitive structures required for normal vision, especially the eye itself, and also acts as the anchor point for the extraocular muscles that are responsible for eye movement. **Bartly J. Mondino, MD**, Director of the Jules Stein Eye Institute, stated that "this investment by Dr. and Mrs. Dabby will provide critical support for a faculty member involved in groundbreaking research into orbital and eyelid anatomy, resulting in improved techniques and approaches to deep orbital disease. We are extremely fortunate that the Dabbys are committed to this important area of medicine."

Both Karen and Frank Dabby hail from New York and met while attending Cornell University. After completing further studies at the University of California, Berkeley, the couple relocated to the East Coast and in 1980 moved to Los Angeles with their two daughters, Shaun and Joy. With a Doctorate in Electrical Engineering and Computer Science, Frank founded and directed several fiber optic development and manufacturing companies and published more than 45 articles and talks and has over 15 patents. Karen is a video editor

and worked as a technical director on several successful television shows including “Wings,” “Ellen,” and two different Bob Newhart sitcoms. She also choreographs for local schools and theater productions. In addition to their involvement with the Jules Stein Eye Institute, the Dabbys are loyal supporters of UC Berkeley. JSEI is indebted to Karen and Frank Dabby for their dedication to advancing the goal of a lifetime of good eyesight for everyone.



Karen and Frank Dabby

Richard B. Shapiro Vision Fund

For more than 15 years, **Richard B. Shapiro** had been struggling with uveitis, an intraocular inflammatory disease. He stated, “To have your sight threatened is very debilitating. I wanted to find the best place in the world to be treated, and I found that was at the Jules Stein Eye Institute.” Meeting with **Gary N. Holland, MD**, Chief of the Cornea and Uveitis Division, and **Anne L. Coleman, MD, PhD**, Professor of Ophthalmology and Epidemiology, Richard was inspired to support their research in this field of medicine. He was particularly impressed by Dr. Holland’s thorough explanation of and promising ideas regarding uveitis.

In addition to his own gift, Richard then asked friends, family, and colleagues to contribute to establishment of the “Richard B. Shapiro Vision Fund”. He felt that “a grassroots approach would be the most effective plan” to raise the necessary funds to support groundbreaking investigations that would broaden the understanding of uveitis and its complications, such as glaucoma, and ultimately find new treatment options. “This was an easy sell. I just told people about what an incredible place Jules Stein is, and the important work being done to preserve people’s sight. The benefits of the scientists’ work will not likely change my situation, but it will help others in the future.” To date, more than \$170,000 has been raised from more than 90 donors, many of whom have given multiple gifts.

In addition to his involvement with the Jules Stein Eye Institute, Richard serves as the Vice Chairman of the Parkinson’s Institute in Sunnyvale, California. He also is the Chairman of the California Horse Racing Board to which Governor Schwarzenegger appointed him to in 2004. For more than 20 years, he has been active in all aspects of commercial real estate including development, leasing, management, and repositioning. Currently, he is the owner of Winco Real Estate Services, Inc., and Chairman of Bridge Capital Finance.

The Elizabeth Taylor Aids Foundation

The Elizabeth Taylor AIDS Foundation made a \$100,000 contribution in 2006 to support the Jules Stein Eye Institute’s Herb Ritts, Jr. Memorial Vision Fund. Established in 2004 by Herb’s family and friends, this fund provides moneys to support AIDS-related vision care, research, and education at UCLA.

Eye problems affect the majority of people with AIDS at some point during their illness, and problems such as cytomegalovirus (CMV) retinitis, can result in blindness. Ongoing investigations and patient care activities at the Jules Stein Eye Institute have created one of the premier centers of expertise dealing with AIDS-related ophthalmic disease in the country.

After Herb’s untimely death in 2002, a fund was established in his honor at the Jules Stein Eye Institute to help people with AIDS-related CMV retinitis and other eye conditions associated with HIV disease. Friends and family gave generously to build this important resource. The recent lead gift from the Elizabeth Taylor AIDS Foundation has allowed the Herb Ritts, Jr. Memorial Vision Fund to be converted to a permanent endowment. The ultimate goal is to build the endowment’s principal to \$1,000,000, enabling a substantial amount to be utilized annually, in perpetuity, for patient care, research, and educational programs related to AIDS and vision.

Dr. Holland stated, “This generous contribution from the Elizabeth Taylor AIDS Foundation will serve as a wonderful tribute to Herb’s dedication to helping people with HIV infection. It will allow us to continue our investigations, as well as our education and patient care programs, and eventually to reach our critical goal of reducing the overwhelming effects of HIV-related eye disease.” Such support is critical in this time of reduced support for AIDS programs from governmental and industry sources.

THANK YOU

GENEROSITY

“Real generosity toward the future lies in giving all to the present.”

– Albert Camus, *The Rebel*

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

Alcon
The Allbritton Foundation
Allergan
American Health Assistance Foundation
AMO
J. Richard and Ardis M. Armstrong Trust
Thelma I. and William F. Brand Trust
Bruce Ford and Anne Smith
Bundy Foundation
Children's Hospital Corporation
Karen and Franklin Dabby
The Carl & Roberta Deutsch Foundation
Diane and Guilford
Dr. and Mrs. David Fett
The Foundation Fighting Blindness
Laraine and David Gerber
A.P. Giannini Foundation
Glaucoma Research Foundation
Brindell and Milton* Gottlieb
Jules and Doris Stein
UCLA Support Group
The Karl Kirchgessner Foundation
William M. Mandl Living Trust
Mark Family Foundation
Wilbur May Foundation

Merck
George E. and Ruth Moss
Gerald Oppenheimer Family Foundation
Pfizer
The Louis and Harold Price
Foundation, Inc.
Research to Prevent Blindness, Inc.
Retina Research Foundation
Drs. Daljit S. and Elaine Sarkaria
Beth and David Shaw
Jerome and Joan Snyder
Stotter Revocable Trust
Elizabeth Taylor AIDS Foundation

Plus numerous anonymous contributors

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

IN HONOR OF...

Brooke S. Barnett
David Fett, MD
Rose Flores
Robert Alan Goldberg, MD
Gary N. Holland, MD
Sherwin J. Isenberg, MD
Ronald and Madelyn Katz
Mr. and Mrs. Steven Lanet

June Mann
Kevin Miller, MD
Albert Sarnoff
Bradley Straatsma, MD, JD
Jess Waiters
Martha Yoneyama
Marc Yoshizumi, MD

IN MEMORY OF...

Nikki Bacharach
Henry G. Bingham
Patti Finn Carruthers
Irma Colen
David Collier
Charles and Frances Freeark
Pauline Gilmartin
Merton A. Glatt
Eric Jackson, Sr
Rueben Kleiwer
Barbara Kassel
Richard McHenry Carey
Margaret Murphy
Chris Potter
Dan Pouliot, Sr
Herb Ritts, Jr.
David Schumacher, PhD
John Sturkie

*Deceased

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 for those in underserved communities. Members of the JSEI family, including its volunteer organization, the JSEI Affiliates, staff, donors, faculty, fellows, and residents, have combined their talents to provide eye care to those who would normally find it difficult to afford contact lenses, glasses, eye care, and surgery.

Gerry Cullen, MD, Retires from the UCLA Mobile Eye Clinic

Gerry Cullen, MD, joined the UCLA Mobile Eye Clinic (MEC) staff in February 1985. At that time he had no idea that his career with the MEC would span 22 years and that he would provide 75,000 free eye examinations in underserved communities to patients ranging in age from three to 103 years old.

Dr. Cullen found great enjoyment in helping children receive ophthalmologic care. "We've taken children who seemed to be slow learners and affected their entire being by correcting their vision, which is often their only impediment to getting a good start in school. We'd get letters and drawings from grateful parents and children, and it really helped me remember why I'd gotten into this field in the first place and why I'd stay at it."

He sometimes found the MEC adventurous beyond words: "One day a patient sat in my chair for an examination with an exposed gun in his belt. Another day, there was a mini-riot outside my door on San Julian Street. It was never dull."

Above all, Dr. Cullen found the MEC to be soul-satisfying work. "The way I see it, on Saturday afternoons in the fall, UCLA, represented by its football team, is marching down the Rose Bowl in those magnificent blue uniforms with the crowd roaring. That's one part of UCLA. But at the same time, with less fanfare, UCLA is down on San Julian Street, providing eye care to the downtrodden. That's what makes for a well-rounded university."



Dr. Gerry Cullen

Originally from Canada, Dr. Cullen completed his ophthalmology residency at the University of British Columbia and a fellowship at Wills Eye Hospital in Philadelphia. Before joining the UCLA MEC, he was in private practice and was an adjunct Assistant Professor at UC Irvine.

Dr. Cullen is grateful for his years with the MEC and is looking forward to this new phase of his life. He and his wife of 40 years, Philomena, are planning to travel, and he'll spend much more time with the pride of his life, his two grandchildren, McKenna and Michael.

JSEI Affiliates Make an Impact in the Los Angeles Community

The JSEI Affiliates, a broad-based volunteer network established in 1990 "to support the programs of the Jules Stein Eye Institute," is responsible for diverse and far-reaching projects to promote vision education and patient care in schools and the Los Angeles community. Over 40 volunteers support our outreach efforts in addition to the eighteen dedicated members of the JSEI Affiliates Advisory Board. We are proud to share the following updates from our most successful community outreach and patient services programs for the 2006-2007 year:

COMMUNITY OUTREACH PROGRAMS

Preschool Vision Screening (PSVS)

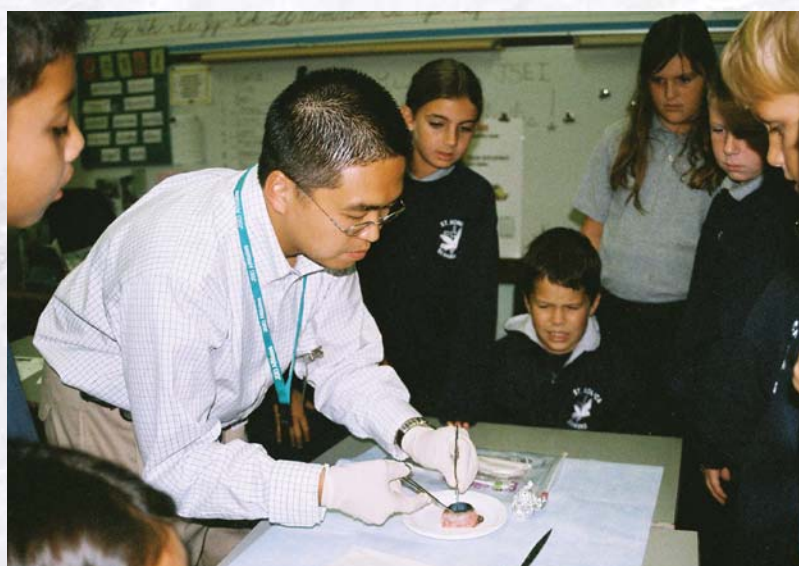
Twenty trained lay volunteers, under the supervision of two retired optometrists, visited local preschools to screen 400 young children for simple refractive errors and eye muscle problems. The team used a variety of tests designed specifically for preschoolers age 3 to 5 years of age. This past year, the Affiliates established a new relationship with the Santa Monica-Malibu Head Start Program, allowing JSEI Affiliates to screen low income children participating in this program that could otherwise not afford a vision exam.

Vision IN-School (VIS)

Vision IN-School is the Affiliates vision education program designed for fourth-to-sixth-grade students. The program is offered to schools throughout the Greater Los Angeles area and is a fun, interactive curriculum that covers anatomy of the eye, eye safety and optical illusions. VIS volunteers visited 10 different schools this past year, presenting to 13 different classrooms to 392 children. The program emphasizes eye safety and injury prevention in hopes of inspiring children to protect their precious gift of vision.



Retired Optometrist and PSVS Volunteer, Dr. Louis Rosenberg (right) conducts a screening evaluation while program director, Dr. Leonard Apt assists.



Dr. Alex Yuan teaches eye anatomy during a 2006 Vision IN-School presentation in Santa Monica.

PATIENT PROGRAMS

Make Surgery Bearable

The Make Surgery Bearable program provides plush “Dr Teddy MD” teddy bears to each and every pediatric patient undergoing eye surgery at JSEI. They are small tokens but go a long way to help children feel secure during a scary time. Funds for the teddy bears are raised in a variety of ways, including the Affiliates’ annual holiday and Mothers Day campaign drives. Sponsorships are also available year-round to honor a loved one or celebrate a special occasion.

Shared Vision

The Shared Vision program collected 2,400 recycled or donated eyeglasses for those in need. Most of the glasses are donated to clinic missions in Africa, Mexico, and other developing nations. Many are distributed to JSEI faculty and staff members who travel abroad to conduct specialized clinics, and some, especially pediatric frames, are utilized by the JSEI’s own Mobile Eye Clinic that conducts vision screenings in low-income areas throughout Southern California.

MagniVision

The JSEI Affiliates launched its first annual Vision Rehabilitation Center Matching Gifts Campaign this last winter to support the UCLA Vision Rehabilitation Center (VRC) . Running from September 1 through December 31, 2006, the campaign raised in excess of \$20,000, in addition to the matching donation from the Affiliates of \$10,000. The campaign significantly increased awareness of the VRC and the services it provides to low vision patients. Funds raised from the campaign were used to purchase new assistive and magnification devices for the VRC Lending Library and to support the general needs of the Center.

In addition to raising much needed funds for the VRC, Affiliates volunteers dedicate their time and energy to work in the Center, assisting patients and teaching them about different low-vision aids available to help them maintain their independence and improve their quality of life.



Affiliates Board Members and Program volunteers Mashid Katiraei, Sheryll Mangahas, Cherie Hubbell, Marcia Lloyd, and Reina Perez volunteer at the Affiliates annual Mothers Day Ice Cream Social held on campus.



Program volunteers John Laione and Teresa Closson sort through donated eyeglasses before shipping them off to a clinic mission in southern Africa.

Annual Report 2006-2007

Jules Stein Eye Institute

Faculty

Anthony J. Aldave, MD

Assistant Professor of Ophthalmology

Director, Cornea Service

Director, Cornea and Refractive Surgery Fellowship

Associate Member of the Jules Stein Eye Institute



Research Summary

Discovering the Genetic Basis of the Corneal Dystrophies

Dr. Aldave's laboratory is involved in the search for and characterization of the genes that are associated with the maintenance of corneal clarity. The corneal genetics laboratory, under Dr Aldave's direction, is involved in the mutation screening for corneal dystrophies in which the responsible gene and mutations are known, such as the TGFBI-related corneal dystrophies; for those dystrophies in which the responsible gene is known but all of the causative mutations are not, such as macular corneal dystrophy; and for those dystrophies for which the genetic basis has not been identified, such as Schnyder's crystalline corneal dystrophy and posterior polymorphous corneal dystrophy.

Public Service

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

Member, American Academy of Ophthalmology Subspecialty Day Committee

Member, American Academy of Ophthalmology Ethics Committee

Associate Examiner, American Board of Ophthalmology

Reviewer for many scientific journals

Honors

Presented with the American Academy of Ophthalmology Achievement Award at the American Academy of Ophthalmology Annual Meeting in Las Vegas, Nevada

Research Grants

Ophthalmic Innovations International, Inc: To Evaluate the Safety and Effectiveness of the Phakic 6 H2 Refractive Anterior Chamber Lens, 7/3/03–7/2/07

Gerald Oppenheimer Family Foundation Center Award: Identification of Keratoconus Cornea Expressed Genes as Candidates in the Pathogenesis of Keratoconus, 9/1/06 – 8/31/07

Case Western University/NIH: A Multicenter Study to Map Genes for Fuchs' Dystrophy, 2/1/06–8/31/06

National Keratoconus Foundation: Identification of Differentially Expressed Genes in Keratoconus, 9/1/06 – 8/31/07

Stein Oppenheimer Endowment Award: Identification of the Genetic Basis of Keratoconus Using a Candidate Gene Approach Incorporating Gene Expression and Linkage Analysis Data, 2/13/07 – 2/12/08



Anthony C. Arnold, MD
 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 the principal investigator for the UCLA center in the National Eye Institute-sponsored clinical study of optic nerve sheath decompression surgery for nonarteritic anterior ischemic optic neuropathy. He has been involved on the Visual Field Data Analysis Committee for the study. He is a primary consultant for an international multicenter study of risk factors for nonarteritic anterior ischemic optic neuropathy, sponsored by the North American Neuro-Ophthalmology Society.

Additional research studies are ongoing, and 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.

Public Service

Chairman of the Association of University Professors of Ophthalmology Educating the Educators Symposium in Sarasota, Florida

Chairman of the European Society of Neuro-Ophthalmology Symposium on Management of Optic Neuritis in Adults and Children in Istanbul, Turkey

Reviewer for many professional journals

Richard S. Baker, MD

Associate Professor of Ophthalmology

Assistant Dean of Research, King/Drew Medical Center, Charles R. Drew University of Medicine and Science, Los Angeles

Associate Member of the Jules Stein Eye Institute



Research Summary

Ophthalmic Epidemiology

Dr. Baker's primary research interest is in the field of ophthalmic epidemiology. Current projects include statistical analysis of national and statewide databases to produce definitive population-based estimates of the distribution and the determinants of major ophthalmic diseases and their treatments. Dr. Baker initiated an ongoing collaborative effort with the epidemiology group of Charles R. Drew University of Medicine and Science to provide population-based comparative assessment of functional vision, daily activity, and quality of life among the elderly population of Los Angeles County, by ethnicity.



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 expressions 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 hereditary dysfunctions such as myopia, cataracts, and retinal diseases. One area of study is the developmental and tissue-specific control of the heat shock promoter of the α B-crystallin gene and the biological function of its gene product. This involves a focus on HSF4, which Dr. Bhat recently reported to be the only heat shock transcription factor of the ocular lens. 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, Bethesda, MD

Member of the University of California, Council on Research

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

Executive Editor for *Experimental Eye Research*

Editor for *Molecular Vision*

Reviewer for many scientific journals

Research Grants

National Eye Institute: Gene Expressions in Normal and Cataractous Lens, 2/1/00–5/31/11

Research To Prevent Blindness: Lew Wasserman Merit Award, 01/01/96–12/31/06

NIH/National Eye Institute: Cloning/Gene/Posterior Corneal Dystrophy, 9/30/05–8/31/10

Dean Bok, PhD

Dolly Green Professor of Ophthalmology

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. 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 research area involves the study of animal models for 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 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.

Public Service

Member of the Scientific Advisory Board for the following organizations: Bank of America/Giannini Foundation, the E. Matilda Ziegler Foundation for the Blind, The Karl Kirchgessner Foundation, Schepens Eye Research Institute/Harvard Medical School, and the Ruth and Milton Steinbach Fund, Inc.

Trustee for Schepens Eye Research Institute/Harvard Medical School

Member of the Editorial Board for *International Review of Cytology*

Reviewer for many scientific journals

Honors

Presented the keynote address at the 1st International Congress of the International Society for Ocular Cell Biology at Homerton College in Cambridge, England

Received the Paul Kayser International Award in Retina Research from the Retina Research Foundation

Research Grants

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

National Eye Institute: Pathology of Inherited Retinal Degeneration, 12/1/01–11/30/06

Retina Research Foundation: Paul Kayser International Award in Retina Research, 12/1/06–11/30/07



Joseph Caprioli, MD

David May II Professor of Ophthalmology

Chief of the Glaucoma Division

Member of the Jules Stein Eye Institute

Research Summary

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

Chairman of the Preferred Practice Pattern Committee of the American Academy of Ophthalmology

Chairman of the Program Committee for the Glaucoma Section of the Association for Research in Vision and Ophthalmology (ARVO)

Member of the Editorial Board for the following journals: *American Journal of Ophthalmology*, *Investigative Ophthalmology and Visual Science*, and *Journal of Glaucoma*

Reviewer for many ophthalmic journals

Honors

Recipient of the Editors' Choice Award from the Editors-in-Chief of the *American Journal of Ophthalmology*, the *Archives of Ophthalmology*, and *Ophthalmology*, bestowed at the American Academy of Ophthalmology in Las Vegas, Nevada

Research Grants

Allergan: Oral Memantine Study, 8/31/99–7/8/07

Allergan: A 48-Month, Multicenter, Randomized, Double Masked, Placebo-Controlled Clinical Study, 8/31/99–7/8/07

Pfizer: Retrospective, Long-Term, Longitudinal Analysis of HRT Image Data in Patients with Ocular Hypertension, 9/5/06–11/1/07

Richard Casey, MD

Associate Professor of Clinical Ophthalmology

Chairman of the Department of Ophthalmology at King/Drew Medical Center, Charles R. Drew University of Medicine and Science, Los Angeles

Member of the Jules Stein Eye Institute



Research Summary

Cornea and External Ocular Disease

Dr. Casey's primary research interest is in the field of angiogenesis (development of blood vessels), with an emphasis on corneal neovascularization (development of abnormal blood vessels). He has worked on the development and testing of pharmacologic agents that both stimulate and inhibit neovascularization. Current projects include the testing of angiogenic modulators, with specific attention to their effects on vascular endothelial cells.

Public Service

Co-founder of The Los Angeles Eye Institute and The Angiogenesis Foundation

Member of the Board of Directors for the Braille Institute of America and for the Research Study Club in Ophthalmology, Los Angeles



Anne L. Coleman, MD, PhD

Frances 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 a randomized trial of antiglaucoma medications versus observation (since not all patients with elevated intraocular pressure develop glaucoma); and the incidence of late macular degeneration in the female Medicare population.

Public Service

Trustee for the American Academy of Ophthalmology

President of Women in Ophthalmology

Consultant for the Medical Devices Advisory Committee Panel

Consultant for the Food and Drug Administration Ophthalmic Devices Panel

Consultant for the Centers for Devices and Radiological Health

Honors

14th Arthur Light, MD Memorial Lecture at Loyola University Medical Center, Stritch School of Medicine, in Chicago, Illinois

Research Grants

National Eye Institute: Ocular Hypertension Treatment Study (OHTS), 1/1/00-12/31/07

National Eye Institute: Incidence of Late Macular Degeneration in Older Women, 9/30/06-7/31/07

National Eye Institute/ Charles R. Drew Univ Med & Sci: Ocular Hypertension Treatment Study, 1/1/04-12/31/06

Pfizer: Analysis of Wet AMD Utilizing CMS, 11/8/04-11/8/06

Friends of the Congressional Glaucoma Caucus Foundation: Student Sight Savers Program, 12/21/04-12/21/06

Pfizer/Eyetech Pharmaceuticals: 0.3MG/Eye Intravitreal Injection, 11/30/05-11/29/07

Joseph L. Demer, MD, PhD

Leonard Apt Professor of Pediatric Ophthalmology

Professor of Neurology

Chief of the Comprehensive Ophthalmology Division

Chair of the EyeSTAR Program

Director of the Ocular Motility Clinical Laboratory

Member of the Jules Stein Eye Institute



Research Summary

Moving Eyes for Better Vision and Balance

Dr. Demer studies the role of the brain and extraocular muscles in the control of eye movements and visual perception. Dr. Demer directs 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 study of an animal model of strabismus, expressing genes which cause binocular misalignment in humans.

Dr. Demer directs a project from the National Institute on Deafness and Communicative Disorders, studying eye-head coordination and dizziness mediated by the inner ear. He is recording eye and head movements using three-dimensional magnetic search coils and inertial motion sensors. His laboratory has developed a unique, high acceleration rotator capable of activating specific sensory organs in the inner ear using physiologic stimuli. This approach allows investigations of vestibulo-ocular reflexes and eye muscle function. 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

Member of the Editorial Board for *American Journal of Ophthalmology*

Grant Reviewer for Austrian National Science Foundation

Grant Reviewer for U.S. Veterans Administration

Chairman of National Institutes of Health Special Emphasis Panel/Initial Review Group for NIDCD

Ad hoc member of National Institutes of Health Visual Sciences Study Sections

Reviewer for many professional journals

Honors

Presented the William Gilles Lecture at the Australia and New Zealand Squint Club in Melbourne, Australia

Visiting Professor at the University of Halifax in Nova Scotia, Canada

Special Guest Speaker at the Chilean Congress of Ophthalmology in Valparaiso City, Chile

Research Grants

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

National Institute on Deafness and Communicative Disorders: Diseases of the Vestibular System: New Tests of Vestibular Function, 7/1/02–6/30/07

National Eye Institute/Boston's Childrens Hospital: Genetic and Anatomic Basis of the Fibrosis Syndrome, 4/1/07–11/30/07

Alcon Research Institute: Recognition Award for Outstanding Contributions in Vision Research, 6/1/04–5/30/09

Research to Prevent Blindness: Walt and Lilly Disney Award for Amblyopia Research Award, 7/1/04–6/30/07

Fellowship: Benjamin T. Crane: Human Vestibular Function in Vertical Canal Planes, 7/1/06–6/30/07



Raymond Douglas, MD, PhD

Assistant Professor of Ophthalmology

Member of the Jules Stein Eye Institute

Research Summary

Characterizing the Molecular Events Occurring in Graves' Disease

Dr. Douglas's research laboratory for Graves' disease is undertaking studies to help identify important therapeutic targets for modifying the clinical behavior of Graves' disease and limiting the morbidity associated with it.

The specific aims for this project are: 1) to identify the genes that participate in thyroid over-function and orbital connective tissue remodeling, 2) to characterize the proteins that are produced in the orbit and thyroid abnormally in Graves' disease, 3) to determine the signaling events that occur in Graves' disease, 4) to identify therapeutic targets for the thyroid glandular and orbital manifestations of Graves' disease.

Honors

Course Director at the American Academy of Ophthalmology Annual Meeting in Las Vegas, Nevada

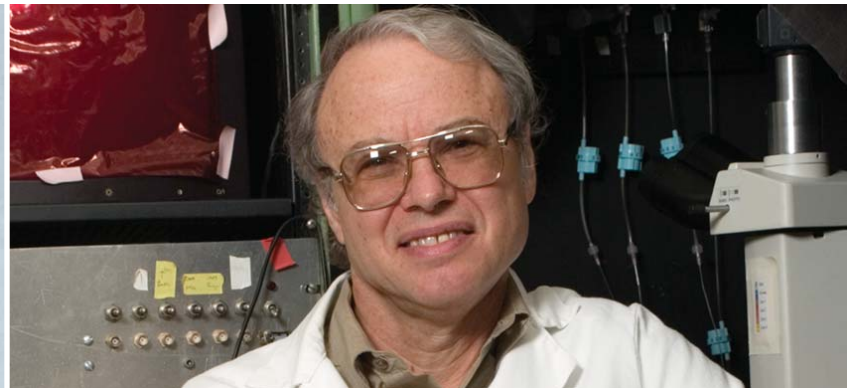
Guest Speaker at Ohio State University Medical Center in Columbus, Ohio

Research Grants

K23 National Eye Institute: Immune Activation of Fibroblasts, 10/1/04–9/1/09

Gordon L. Fain, PhD

Distinguished Professor of Physiological Science,
Ophthalmology and Neuroscience
Member of the Jules Stein Eye Institute



Research Summary

Physiology of Neurons

Dr. Fain's primary interest is in the physiology of photoreceptors in the vertebrate eye. He is particularly interested in the biophysical nature of the electrical signal and the role of calcium in its production. Such information will help investigators understand how the eye works and may provide insight into the mechanism of retinal degeneration.

Research Grant

National Eye Institute: Physiology of
Photoreceptors, 6/1/05–5/31/08



Debora B. Farber, PhD, DPhhc
 Karl Kirchgessner 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 using biochemistry, molecular biology, molecular genetics, animal models of retinal degeneration, and patients' DNA. Her laboratory has cloned and characterized several genes encoding enzymes and proteins that play a key role in vision. Dr. Farber demonstrated that genetic abnormalities in the β -subunit of cGMP-phosphodiesterase (β -PDE) lead to blindness in mice and dogs, and cause one type of autosomal recessive retinitis pigmentosa (RP), as well as congenital stationary night blindness. Utilizing gene therapy, her group rescued the *rd* mouse photoreceptors using gutted adenoviral vectors and more recently iontophoresis to deliver the normal gene to these cells. Her laboratory also isolated the RP1 gene (responsible for a type of autosomal dominant RP), the mouse homologue of the gene causing X-linked juvenile retinosis (XLRS), and the gene causing disease in the *rd7* mouse—a model for Enhanced S-Cone Syndrome. They have characterized biochemical features of retinoschisin, the product of the XLRS gene, and established that it is secreted from the photoreceptors and transported to the inner retina where it holds the cell layers together with its adhesion properties. They also identified the gene that is disrupted in the *Rd4* mouse, another model of retinal disease.

Furthermore, her group is working on the mechanisms that regulate transcription and expression of genes that encode retinal proteins. They identified a new transcription factor that synergistically interacts with other retinal-specific transcription factors to control the level of activity of the β -PDE promoter. Moreover, they identified response elements involved in the translation of this gene. Other studies that are performed in Dr. Farber's laboratory include the characterization of transgenic mice (generated on the γ -PDE knockout background) that carry

different mutated alleles of the γ -PDE gene and the characterization of animal models of ocular albinism, a disease that causes permanent visual impairment.

Finally, Dr. Farber's team is testing the DNA from patients with retinal dystrophies for mutations in candidate genes.

Public Service

Member of the Scientific Advisory Board for the Foundation Fighting Blindness and Scientific Advisor to the Center for Vision Research, State University of New York Health Science Center at Syracuse, New York

Scientific Advisor and Member of the Board of Directors for The Vision of Children

Member of The ARVO Foundation Campaign Committee, 2002–present

Advisor for the Canadian Retinitis Pigmentosa Foundation, 1998–present

Member of the Editorial Board for *Molecular Vision*

Reviewer for several journals

Research Grants

National Eye Institute: Molecular Mechanisms in Retinal Degenerations, 7/1/07–6/30/08

National Eye Institute (in collaboration with UCSB): Transgenic/Molecular Approaches to Ocular Albinism, 7/1/03–6/30/07

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

Vision of Children: Studies in Ocular Albinism, 7/1/06–6/30/07

National Eye Institute: PDEs in Photoreceptor Metabolism & Disease, 8/1/99–7/31/06

Vision of Children Foundation Grant: Embryonic Stem Cell Microvesicles: A New Approach to RNA Transfer, 6/1/07–5/31/09

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 employs site-directed mutagenesis (mutation caused by insertion of new genetic material into a normal gene) 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

Reviewer for many scientific journals

Research Grants

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



Robert Alan Goldberg, MD

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 specialized lasers and specifically designed microscopic instrumentation. In addition, detailed clinical information gathered from patients with Graves' orbitopathy is recorded in a shared database as a way to better understand the natural history and response to treatment of this multifaceted disease, which is a cause of significant visual loss and discomfort. Dr. Goldberg is also studying other forms of thyroid related orbitopathy in collaborative research with Terry J. Smith, MD, in the Division of Molecular Medicine at Harbor-UCLA Medical Center. 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 MR imaging to evaluate motility problems following trauma and orbital surgery, and three-dimensional analysis of orbital anatomy. Surgical advances in the treatment of deformities and dysfunction of the eyelids and orbit depend upon a better understanding of their anatomy.

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, and improved materials such as amniotic membrane and other allografts. 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.

Furthermore, new research being conducted evaluates the use of the Hydrogel Lacrimal Stent in dacryocysto-rhinostomy (DCR) surgery. This innovative material provides improved therapy in tear duct surgery, allowing for less scarring and improved results.

Public Service

Assistant Vice President of Professional Education for the California Academy of Ophthalmology, 1999–present

Fellow and Member of the Executive Committee for the American Society of Ophthalmic Plastic and Reconstructive Surgeons

Fellowship Program Director for the American Academy of Cosmetic Surgery

Member of the Editorial Board for the following journals: *Archives of Ophthalmology*, *Ophthalmic Plastic and Reconstructive Surgery*, and *Archives of Facial Plastic Surgery*

Research Grants

Medicis: A Phase III, Randomized, Placebo-Controlled, Multicenter Double-Blind Study of Reloxin, 1/22/07–1/22/09

Christine R. Gonzales, MD

Assistant Professor of Ophthalmology

Associate Member of the Jules Stein Eye Institute



Research Summary

Vitreoretinal Diseases

Dr. Gonzales is primarily interested in retinal disease with abnormal angiogenesis such as age-related macular degeneration (AMD), diabetic retinopathy, and retinopathy of prematurity (ROP). She is the principal investigator in many clinical trials evaluating a new pharmacologic treatment for exudative macular degeneration. This treatment involves an intravitreal injection of an agent that blocks vascular endothelial growth factor (VEGF). This growth factor is known to play an important role in abnormal blood vessel growth in AMD. VEGF is also known to increase vascular permeability in patients with diabetic retinopathy and other retinal vascular diseases leading to macular edema. Dr. Gonzales is the principal investigator in other clinical trials in which the anti-VEGF agent is injected into the eye in patients with macular edema secondary to diabetic retinopathy and central retinal vein occlusions. These treatments are also being considered for ROP, in an upcoming clinical trial.

Research Grants

EyeTech Pharmaceuticals:

Open Label, Non-Compared Protocol,
1/4/05–12/31/06

Pegaptanib Sodium Study, 8/16/04–1/31/07

Intravitreal Injections for Patients with Exudative
AMD, 10/16/01–4/1/08

Intravitreal Injections for Patients with Exudative
AMD, 2/12/03–8/31/06

Pegaptanib Sodium for Patients with Exudative
Subfoveal AMD, 6/15/04–9/30/06

A Prospective OL MC Trial Evaluating the Safety of
0.3MG/Eye Intravitreal Injection Macugen,
11/30/05–11/29/07

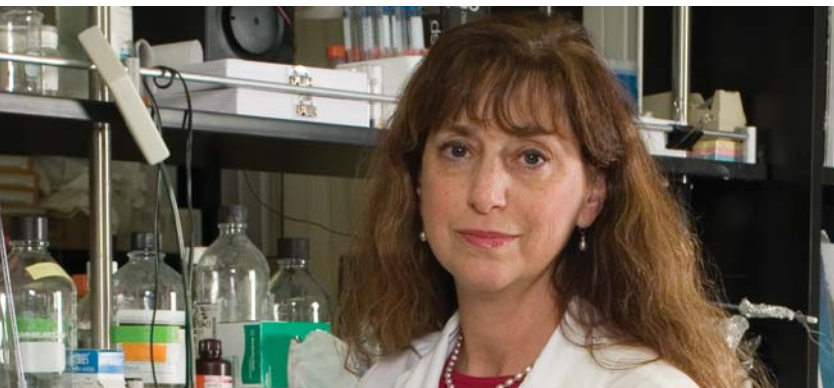
A Phase IV, Open Label, Multicenter Trial of
Maintenance Intravitreal Injections, 9/7/06–8/31/08

Macugen with Sham Photodynamic Therapy,
7/28/05–4/30/08

Pegaptanib Sodium (Macugen) for Macular Edema,
2/3/06–2/2/10

Oxigene, Inc: Combretastin A4 Phosphate for
Subfoveal Choroidal Neovascularization,
11/1/05–5/1/07

Open Label Macugen for the Treatment of Macular
Edema Secondary to Branch Retinal Vein Occlusion,
Palmetto Retina Center, 11/3/06–10/2/08



Lynn K. Gordon, MD, PhD

Associate Professor of Ophthalmology

Chief of the Section of Ophthalmology,
Department of Veterans Affairs

Greater Los Angeles Healthcare System

Member of the Jules Stein Eye Institute

Research Summary

Immune Mechanisms of Ocular Inflammatory Disease

Dr. Gordon's primary research interest is in the molecular mechanisms of inflammatory diseases. One area of intense interest is in the role of epithelial membrane protein 2 (EMP2) in retinal pigment epithelium (RPE). RPE is a critical cell type in normal retinal homeostasis and plays major roles in photoreceptor health. In addition, RPE is responsible for the regulation of inflammatory responses in the ocular microenvironment and for maintenance of the blood brain barrier. EMP2 plays an important role in cell surface expression of specific proteins that may impact on the function of the RPE.

Chlamydia is responsible for significant morbidity of many organ systems including the eye, lung, and genital tract. Trachoma, caused by chlamydia, remains one of the leading causes of blindness in the developing world. Recently, her laboratory identified a surface receptor for chlamydia and blockade of the receptor significantly decreased infectivity. This work may lead to new therapeutic approaches to this devastating infection.

Finally, her laboratory identified beta B1 crystallin as a cognate antigen for an antibody found in a subset of patients with uveitis. Reactivity against this and other lens crystallins is associated with cataract formation in these patients. In addition, animal studies support the uveitogenicity of a subset of these proteins, allowing development of a new animal model for uveitis.

Clinical Research

Dr. Gordon is on the steering committee of the neuro-ophthalmologic research consortium, NORDIC, which is a national group dedicated to promote collaborative prospective clinical studies in neuro-ophthalmology. At the Jules Stein Eye Institute she interacts with several faculty regarding specific clinical projects. Under the direction of Bradley R. Straatsma, MD, JD, a method for the prospective and thorough clinical evaluation of patients undergoing cancer immunotherapy was developed and is being currently used in prospective studies. A longitudinal, clinical study of visual field testing in patients with birdshot chorioretinopathy is being conducted with Ralph D. Levinson, MD, and Gary N. Holland, MD.

Research Grants

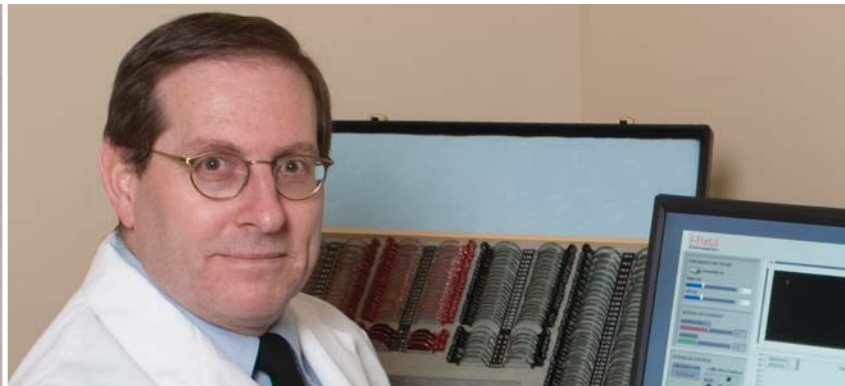
Research to Prevent Blindness: James S. Adams Scholar Award,
7/1/02–6/30/07

VA Merit Grant: EMP2, a Molecular Switch for Function of RPE,
3/1/05–9/30/09

The Gerald Oppenheimer Family Foundation: Prevention of
Chlamydia Infection Through Blockade of the Host Receptor Protein,
8/1/05–7/31/06

Veterans Affairs: Intergovernmental Personnel Agreement,
11/28/05–08/25/07

Michael B. Gorin, MD, PhD
Harold and Pauline Price Professor of Ophthalmology
Member of the Jules Stein Eye Institute



Research Summary

Heritable Eye Disorders and Molecular Genetics of Age-Related Maculopathy

Dr. Gorin's primary research focus is in the field of molecular genetics of heritable eye disorders, specifically in the complex genetics of age-related maculopathy. 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 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, glaucoma, as well as monogenic disorders such as hereditary retinal degenerations, glaucoma, cataracts, and ocular syndromes. In addition to identifying the genes and variants that cause these conditions, 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 will be 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 Plaquinel and tamoxifen).

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

Public Service

Co-editor of the journal *Current Eye Research*

Honors

Elected to the Omega Delta Honor Society for Public Health

Recipient of the Lew R. Wasserman Merit Award

Recipient of the Senior Scientist Investigator Award from Research to Prevent Blindness

Research Grants

National Eye Institute: Genetics in Age-Related Maculopathy, 4/1/07–3/31/12

American Health Assistance Foundation: Linkage and Association Studies for Macular Degeneration, 4/1/06–3/31/08



Anurag Gupta, MD

Assistant Professor of Ophthalmology

Associate Member of the Jules Stein Eye Institute

Research Summary

Retinal Surgery

Dr. Gupta's research interests are in the area of complex retinal detachments, retinal vascular diseases, novel drug delivery systems, and ocular imaging strategies.

Dr. Gupta was the principal investigator of the first gene therapy clinical trial at the Jules Stein Eye Institute. His clinical trials span the development of novel surgical approaches for complex post-segment conditions to elegant drug delivery solutions for the back of the eye. He is the principal investigator in the only national trial seeking a preventive treatment for macular degeneration.

As director of the Ophthalmic Ultrasound Laboratory, he has helped to pioneer novel imaging techniques for the retinal periphery. His work with the underserved at Harbor UCLA in Torrance has led to an interest in health care delivery strategies.

Public Service

Reviewer for several ophthalmic journals

Research Grants

Gen Vec Inc.: Intravitreal Injections for Patients with Exudative AMD, 1/31/03–12/31/06

Alcon Research, LTD: Post Juxtasclear Administration of Anecortave Acetate v. Sham Administration for Patients with Exudative AMD, 6/11/04–5/31/08

Allergan Pharmaceutical Corp.: Dexamethasone Posterior Segment, 8/16/04–8/16/07

Sirna Therapeutics: Subfoveal Choroidal Neovascularization, 4/29/05–4/1/08

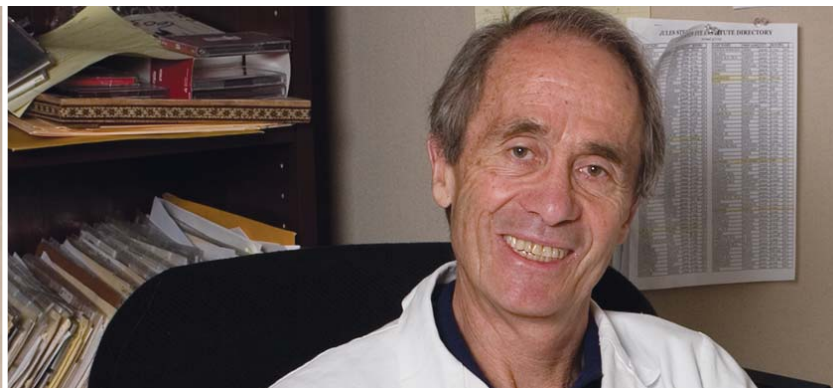
National Eye Institute/JAEB Center for Health Research: The Diabetic Retinopathy Clinical Research Network², 6/1/03–12/31/09

Allergan Sales, Inc.: 6 mo Ph 3 3 MC M R SH-C TR ASSESS S&E UG 700 350 UG, 8/16/04–1/31/09

Sirna Therapeutics: A Phase I, OL Dose ESC Trial of a Single Intravitreal Injection of Sirna-027, 4/29/05–4/1/08

Allergan Pharmaceutical Corp.: Standard Care v. Corticosteroid (SCORE), 8/20/04–2/19/09

Michael O. Hall, PhD
Professor of Ophthalmology
Member of the Jules Stein Eye Institute



Research Summary

Retinal Biochemistry, Retinal Degeneration, Cellular Interaction, and Metabolism of Retinal Pigment Epithelium

Dr. Michael Hall is studying the molecular signaling processes involved in the phagocytosis of outer segments (OS) by retinal pigment epithelial (RPE) cells. In his laboratory, studies over the past five years have been directed toward identifying the ligand-receptor interactions involved in this process. Using cultures of rat RPE cells, they have been able to show that both Gas6 and serum Protein S specifically interact with the receptor tyrosine kinase, Mer, situated on the apical surface of the RPE cell. When either Gas6 or Mer are absent, as in the mutant RCS strain of rat, OS phagocytosis does not occur, and retinal degeneration results. They are currently investigating the localization of Gas6 and Protein S in the eye, using both immunohistochemistry and *in situ* hybridization. Recent studies in Dr. Hall's laboratory have shown the presence of the novel protein, MFG-E8 in the retina and RPE. They have shown that the RPE contains a novel form of MFG-E8 (MFG-E8 Long), which is not present in any other ocular tissues. This suggests that MFG-E8 Long plays a specific role in the RPE, possibly in its role in phagocytosis of OS.

Public Service

Reviewer for several scientific journals

Research Grant

National Eye Institute: Studies of Gas6/Mer-mediated Phagocytosis of OS By RPE Cells, 9/1/03–8/31/06



David Rex Hamilton, MD

Assistant Professor of Ophthalmology

Director, UCLA Laser Refractive Center

Associate Member of the Jules Stein Eye Institute

Research Summary

Corneal and Intraocular Refractive Surgery

Dr. Hamilton's research interests are in the areas of refractive surgical techniques including the refinement of new customized procedures, particularly those designed to treat patients with complications from previous refractive surgery. He is also interested in the clinical study of intraocular lenses for the treatment of high myopia and presbyopia. Currently, he is developing clinical studies in custom LASIK enhancements and conductive keratoplasty for the treatment of post-refractive surgical irregular astigmatism. Dr. Hamilton is also actively involved in training residents and fellows in the surgical treatment of refractive errors.

Public Service

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

Member of the Preferred Practice Pattern Committee for Refractive Surgery for the American Academy of Ophthalmology, 2006–present

Member of the Specialty Information Team, Refractive Management for the American Academy of Ophthalmology, 2006–present

Gary N. Holland, MD

Vernon O. Underwood Family Professor of Ophthalmology

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, Cornea, and External Ocular Disease

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 cause of retinal infections in the general population. This parasitic infection occurs worldwide and can lead to severe vision loss. Dr. Holland is conducting epidemiological and laboratory investigations to understand the sources of infection, course of disease, response to treatment, and outcomes more thoroughly. Studies are also being conducted to identify both host and parasite factors that are related to disease severity. This information may lead to better strategies for prevention of eye involvement or treatment of active eye disease.

Since 1981, Dr. Holland has also been involved in the study of HIV-related eye disease. Studies are being performed to investigate risk factors for development of, and long-term outcomes associated with, 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. In another group of studies, Dr. Holland is investigating abnormalities of blood flow in the retinae of HIV-infected individuals, which may lead to retinal damage similar to diabetic retinopathy. Dr. Holland is also participating in a large, multicenter

study to investigate how the ocular manifestations of HIV disease have changed since the introduction of potent antiretroviral drugs.

Dr. Holland has established a special program to provide care for children with uveitis, in conjunction with members of the Department of Pediatrics. Through this program, he is studying the most effective techniques for evaluation and treatment of uveitis in this age group.

Other areas of investigation include techniques for evaluation of corneal infections; results of corneal transplantation in patients with pre-existing glaucoma or other disorder; and treatment of non-infectious uveitis using various immunosuppressive drugs.

Honors

Presented the Gifford Lecture at the Gifford-Truhlesen Alumni and Residents Day at the University of Nebraska Medical Center in Omaha, Nebraska

Guest speaker at the Eye and Zoonosis Hôpital Ophthalmique Jules-Gonin in Lausanne, Switzerland

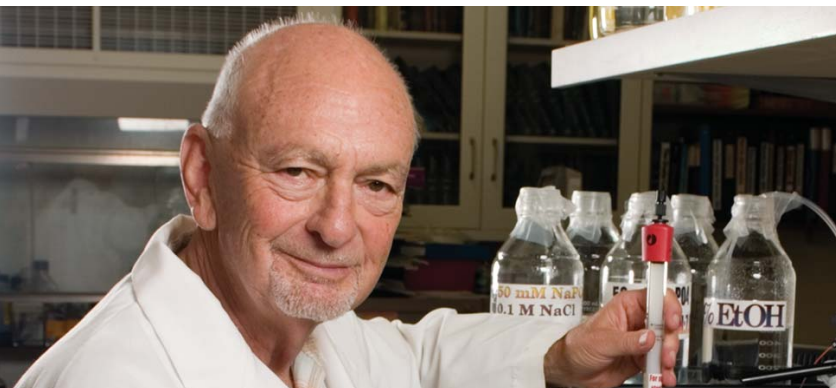
Research Grants

Research to Prevent Blindness: Physician-Scientist Award, 1/1/03–12/31/06

National Eye Institute/Johns Hopkins Univ: Studies of the Ocular Complications of AIDS (SOCA), 8/1/06–7/31/07

National Eye Institute: Multicenter Uveitis Steroid Treatment Trial (MUST), 5/1/06–4/30/07

Centers for Disease Control and Prevention: Factors Related to the Severity of Ocular Toxoplasmosis, 6/1/06–12/31/07



Joseph Horwitz, PhD

Oppenheimer Brothers 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 then are 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 eye lens α -crystallin, a protein that plays an important role in keeping the eye lens clear during normal aging.

Public Service

Ad hoc member of the Board of Scientific Counselors for the National Institutes of Health

Ad hoc member of the Study Section for RO3 Grants for the National Eye Institute

Grant reviewer for the British Medical Research Council

Member of the Editorial Advisory Board for *Biochimica et Biophysica Acta*

Reviewer for many scientific journals

Research Grant

National Eye Institute: Alpha-Crystallin & Cataractogenesis, 8/1/04–7/31/09

Wayne L. Hubbell, PhD

Jules Stein Professor of Ophthalmology

Professor of Chemistry and Biochemistry

Associate Director of the Jules Stein Eye Institute

Co-Chief of the Vision Science Division



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," i.e., 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, his 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 a wealth of information about the local environment in the protein. With a sufficiently large set of labeled proteins, global information on structure is obtained, and most importantly, 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 of the National Academy of Sciences

Chairman of the Advisory Committee of the National Biomedical ESR Center, Medical College of Wisconsin

Member of the Advisory Committee of the Center for Very Low Frequency Imaging for In Vivo Physiology, University of Chicago

Member of the Advisory Committee for Solid-state NMR of Proteins Resource Center, University of California, San Diego

Member of the Advisory Committee for the Advanced ESR Technology Research Center, Cornell University

Research Grants

National Eye Institute: Molecular Basis of Membrane Excitation, 5/1/05–4/30/10

National Eye Institute: Core Grant for Vision Research, 3/1/04–2/28/09



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 how the cornea develops 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 successfully treat bacterial conjunctivitis 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 are currently conducting new studies to evaluate the eye drops to treat the number one cause of preventable pediatric blindness in the world—corneal infections due to bacteria and fungi. These studies are ongoing in children in India and the Philippines. Another study in Kenya evaluating new treatment schedules using povidone-iodine eye drops to prevent conjunctivitis of newborns was recently published.

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 eventually 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 should keep the oxygen at an appropriate level, minimizing the possibility of blindness from retinopathy of prematurity.

Honors

Presented the second Eugene R. Folk Memorial Lecture at the Pediatric Ophthalmology Symposium at the University of Illinois in Chicago, Illinois

Presented the Distinguished Alumnus Lecture at the Children's Hospital, National Medical Center of George Washington University School of Medicine in Washington D.C.

Received the Heed Award at the American Academy of Ophthalmology Annual Meeting in Las Vegas, Nevada

Research Grants

Research to Prevent Blindness: RPB Physician Scientist Award, 1/1/06–12/31/06

The Gerald Oppenheimer Family Foundation: Conjunctival Tissue Gas Monitoring to Prevent Eye Disease, 8/1/05–7/31/06

Allan E. Kreiger, MD
Professor of Ophthalmology
Member of the Jules Stein Eye Institute



Research Summary

Retinal Disease and Vitreoretinal Surgery

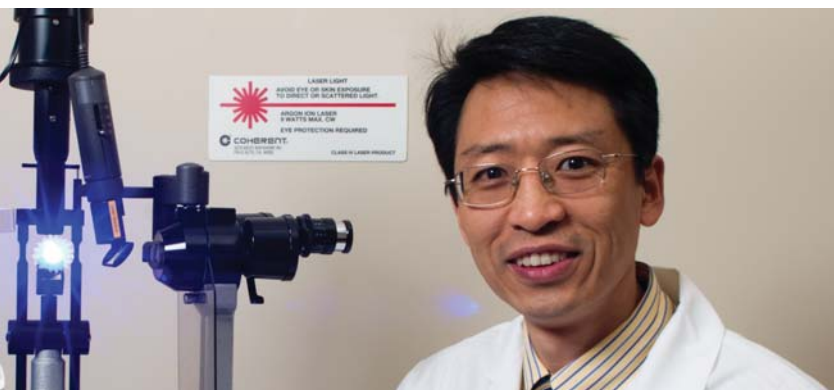
Dr. Kreiger is particularly interested in the expanding field of vitreo-retinal surgery. He has worked to clarify the indications for improved outcomes of operations on complex forms of vitreous and retinal diseases, including diabetic retinopathy, complicated rhegmatogenous retinal detachment, and ocular 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 several ophthalmic journals

Research Grants

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



Simon K. Law, MD, PharmD

Associate Professor of Ophthalmology

Chief of the Section of Ophthalmology Surgical Services,
Department of Veterans Affairs
Greater Los Angeles Healthcare System

Associate Member of the Jules Stein Eye Institute

Research Summary

Optic Disc Evaluation

Dr. Law 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.

Glaucoma

Dr. Law is involved in a survey to determine trends in the perioperative management of patients on anticoagulation or antiplatelet aggregation therapy undergoing glaucoma surgery, including trabeculectomy and glaucoma aqueous shunt procedures. The use of anticoagulation or antiplatelet aggregation therapy in his glaucoma clinic will be reviewed. In addition, questionnaires will be distributed to members of the American Glaucoma Society (AGS) via e-mail. The medications of interest include: aspirin, ticlopidine, clopidogrel, dipyridamole, and warfarin, as these are the most frequently used therapeutic modalities. The surgeries in question include trabeculectomy with or without metabolite, and implantation of aqueous drainage devices.

Dr. Law 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. He is also collaborating with the Southern California Permanente Medical Group to identify risk factors of glaucoma, to create a risk calculator for glaucoma in the HMO setting, and to apply such a tool in screening for glaucoma.

Public Service

Reviewer for several Ophthalmology journals

Honors

Dennis W. Jahnigen Career Development Scholars Award from the American Geriatrics Society

Research Grants

Southern California Permanente Medical Group:
An Evaluation of the Incidence of Glaucoma Risk Factors in Patients from a Managed Care Setting, 10/1/05–7/31/07

Ralph D. Levinson, MD

Assistant Professor of Ophthalmology

Associate 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.

Public Service

Reviewer for several ophthalmic journals

Research Grants

MacDonald Family Foundation: Mechanisms of Infl Dis Associated w/Human Leukocyte Antigen (HLA), 5/1/02–6/30/07

MacDonald Family Foundation: Immunogenetics, 5/1/02–6/30/08

Allergan: An 8-Week, Phase 3, Multicenter, Masked, Randomized Trial, 4/1/06–12/31/07

Allergan: A 6-Week, Phase 3, Multicenter, Masked, Randomized Trial, 4/7/06–12/31/07



Kevin M. Miller, MD

Kolokotronis Professor of Ophthalmology

Member of the Jules Stein Eye Institute

Research Summary

Comprehensive Ophthalmology/Cataract and Refractive Surgery

Dr. Miller's research interests are in refractive cataract surgery, intraocular lenses, ophthalmic optics, and surgical outcomes. He performs most of his research in collaboration with Michael D. Olson, OD, PhD, and with fellows and residents at the Institute. He is an investigator for several lenses. He obtained a humanitarian device exemption from the U.S. Food and Drug Administration (FDA) to implant Morcher GmbH aniridia implants in eyes with congenital and acquired iris defects. He recently completed the Ophtec USA capsular tension ring clinical trial; this device is now FDA approved. He participated in the development and national launch of the Alcon Laboratories Infiniti Vision System. He continues to work with Alcon to study the thermal effects of its phacoemulsification systems.

Dr. Miller is interested in the cataract surgical outcomes of functionally one-eyed patients. He published some of the initial investigations on this topic, including a large surgical case series and a case-control study, both of which found a high prevalence of ocular comorbidity in monocular patients. He recently showed that monocular patients experience a two-fold greater improvement in functional vision than age- and sex-matched binocularly sighted controls, despite similar gains in best-corrected Snellen visual acuity. He also showed that monocular patients require more surgical effort at the time of cataract surgery than binocular patients.

Dr. Miller is interested in the surgical outcomes of patients who undergo cataract surgery following retinal surgery. He published one of the initial investigations on phacoemulsification after pars plana vitrectomy, and one of the first papers on cataract surgery by the phacoemulsification technique following retinal detachment repair by scleral buckle placement. Currently he is studying a series of patients

with complicated retinal histories, including both pars plana vitrectomy and scleral buckling. Additional ongoing studies include an analysis of the incidence of posterior capsule opacification requiring Nd:YAG capsulotomy after anterior capsule polishing, an analysis of evolving indications for intraocular lens exchange, a review of the outcomes of zero and minus power intraocular lens implantation, and an analysis of astigmatism outcomes following cataract surgery combined with astigmatic keratotomy.

With the aid of several generous donors, Dr. Miller recently installed a state of the art audio-visual system in one of the Institute's operating rooms. The system enables surgeons to display their cases on a wide screen plasma display and record them with sound on DVD. With financial assistance from other donors including the Conrad Hilton Foundation, Dr. Miller is implementing an electronic medical record and practice management system that will facilitate patient care and greatly improve the speed of patient-based research.

Public Service

Member of the American Academy of Ophthalmology Cataract and Anterior Segment Knowledge Base Panel

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

Member of the Editorial Board for *Comprehensive Ophthalmology Update*

Reviewer for numerous ophthalmology journals

Research Grants

Ophtec, USA: Device Study, 7/14/04–7/15/06

Hoya Corporation: UV Absorbing Acrylic Posterior, 11/1/04–10/31/07

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 is studying 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 is being 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

Member of the Board of Directors for the Braille Institute

Member of the Board of Trustees for the Association of University Professors of Ophthalmology

Executive Vice-President of the Association of University Professors of Ophthalmology

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

Editor, *News & Views*

Honors

Presented the Ulrich Ollendorff Memorial Lecture at the Harkness Eye Institute, Columbia University in New York, New York

Presented the 4th Stuart Brown Lecture at the Shiley Eye Institute, University of California at San Diego in La Jolla, California

Presented the 15th Gifford Lecture at the University of Nebraska Medical Center in Omaha, Nebraska

Research Grant

Research to Prevent Blindness: Departmental Unrestricted Grant Award, 1/1/06–12/31/06



Steven Nusinowitz, PhD

Assistant Professor of Ophthalmology

Associate Member of the Jules Stein Eye Institute

Research Summary

Mechanisms of Retinal Degeneration

Dr. Nusinowitz's primary research interest is the study of the sites and mechanisms of disease action in inherited eye diseases such as retinitis pigmentosa and macular degeneration. Using electrophysiological and psychophysical techniques, he is evaluating patients with diseases of the retina with known genetic abnormalities to better understand how specific gene mutations result in the wide spectrum of disease expression. In the laboratory, he is studying naturally occurring mouse models of retinal disease in order to identify new candidate genes that may be involved in human disease. Additionally, he is using a mouse model to study a variety of therapeutic interventions that may eventually halt or reverse the progression of some forms of retinal disease.

Honors

Recipient of the Stein-Oppenheim Award, bestowed on April 29, 2006

Research Grant

The Karl Kirchgessner Foundation: Unrestricted Grant, 12/1/04–6/30/08

The Vision of Children: Photoreceptor and Retinal Pigment Epithelium (RPE), 4/30/06–6/30/08

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

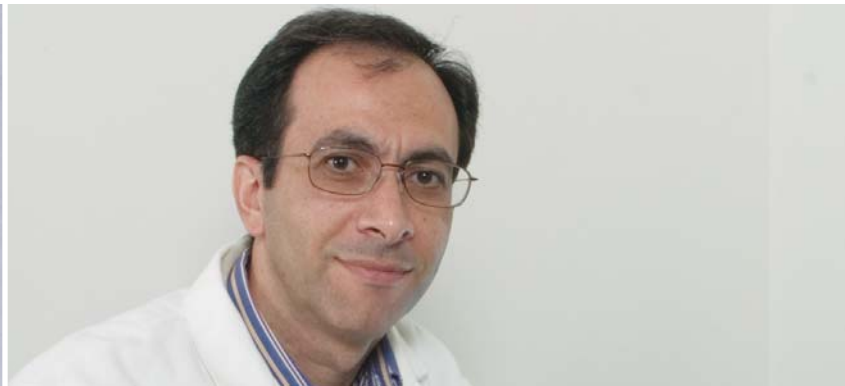
Stein Oppenheimer Award: 4/29/06–4/30/07

Sirion Therapeutics: A Phase II, Multicenter, Randomized, Double-Masked Placebo-Controlled, Dose Comparison Study, 6/1/07 – 5/31/08

Natik I. Piri, PhD

Assistant Professor of Ophthalmology

Associate 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 objective of Dr. Piri's research is aimed toward understanding the molecular mechanisms leading to retinal ganglion cell (RGC) death in glaucoma. Although, it has been established that RGC die by apoptosis, the exact pathway from death stimulus to cell death is not completely understood. As an initial step in this direction, Dr. Piri is analyzing gene expression patterns that are altered in glaucomatous retinas, using DNA microarrays and proteomics technologies, as well as conventional molecular biology, biochemistry, and genetic methods.

Dr. Piri is also working on identification of new genes whose expression is restricted to the retinal ganglion cells. Once these genes are identified, Dr. Piri will study their possible involvement in glaucoma and other optic neuropathies. Lastly, he will investigate the function of the corresponding proteins of these new genes in RGC differentiation, metabolism, and structural features. Gene and protein expression studies may lead to a better understanding of the regulatory events involved in RGC apoptosis, and provide molecular targets for development of new therapeutic agents with neuroprotective effect in order to prevent or delay the loss of ganglion cells in glaucoma.

Public Service

Reviewer for several ocular and neuroscience journals



Arthur L. Rosenbaum, MD

Professor of 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 is in the field of strabismus (misalignment of the eyes). He is one of the original investigators in the area of botulinum toxin injection of extraocular muscles in the treatment of strabismus and facial spastic disorder. He continues to be involved in research projects utilizing this treatment following surgical overcorrection and undercorrection in an attempt to avoid reoperation; and for sixth nerve palsy.

Dr. Rosenbaum is presently working on new surgical approaches to complicated strabismus problems resulting from trauma and congenital problems, where most of the ocular muscles are not functioning correctly. He has recently completed studies on strabismus complications following cosmetic blepharoplasty and on the use of adjustable suture strabismus surgery in children. Dr. Rosenbaum has recently co-authored a major textbook on strabismus.

Public Service

Vice President of the International Strabismological Association, 2002–2006

Research Grants

Research to Prevent Blindness: Physician-Scientist Award, 1/1/04–12/31/06

National Eye Institute: Lateral Rectus Reanimation Following Sixth Nerve Palsy, 9/1/04–8/31/07

Steven D. Schwartz, MD

Associate Professor of Ophthalmology

Chief of the Retina Division

Director of the UCLA Diabetic Eye Disease and Retinal Vascular Center

Member of the Jules Stein Eye Institute



Research Summary

Vitreoretinal Ocular Diseases

Dr. Schwartz's research interests involve vitreoretinal diseases, with particular emphasis on vasoproliferative diseases, such as retinopathy of prematurity and diabetic eye disease; and degenerative diseases like macular degeneration. Clinical research includes novel laser applications such as transscleral diode laser and picosecond laser; surgical anatomy and microanatomy of vitreoretinal pathology, such as advanced traction retinal detachment in proliferative diabetic retinopathy and retinopathy of prematurity; and etiology, epidemiology and treatment of idiopathic macular hole.

Dr. Schwartz also has a strong interest in improving both the quality of and access to specialized ophthalmology care through innovative teleophthalmological approaches to screening for eye diseases, specifically diabetic retinopathy and retinopathy of prematurity (ROP). Currently, a collaborative program with the Gonda Diabetes Center is underway, in which screening for diabetic retinopathy is conducted with a nonmydriatic camera (a camera that does not require dilation of the eyes) as part of each patient's regular diabetes treatment. Results are telecommunicated to specialists at the Jules Stein Eye Institute for interpretation and follow-up. Also under study, is a revolutionary hand-held digital camera, which takes high-resolution panoramic digital images of the retina of premature babies in order to screen for ROP.

Public Service

Reviewer of educational materials for the American Academy of Ophthalmology and the United States Department of Veterans Affairs

Member of the UCLA Hospital Speakers' Committee

Reviewer for many ophthalmic journals

Honors

Recipient of the Morton K. Rubenstein Award from the Venice Family Clinic, bestowed on May 20, 2006

Research Grants

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

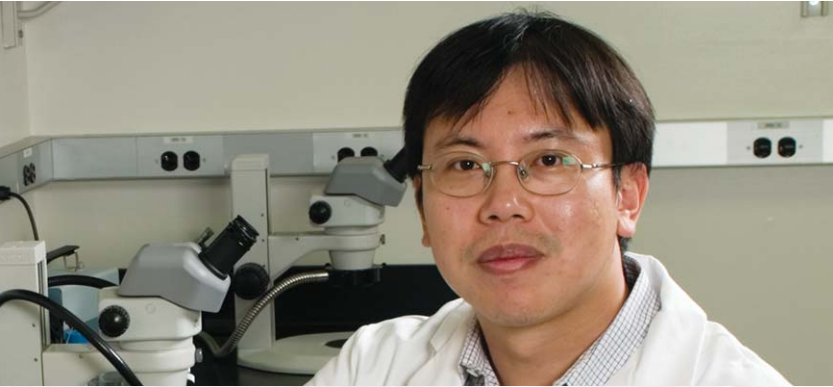
Lowy Medical Research Institute/NEI: Macular Telangiectasia, 8/31/06–8/31/10

Emmes Corporation: Age-Related Eye Disease Study II, 1/1/06–12/31/07

Sirion Therapeutics, Inc.: A Phase II, Multicenter, Randomized, Double-Masked, Placebo-Controlled Dose Comparison Study, 4/30/07–4/29/10

Chiltern International: A Multicenter, Randomized, Placebo-Controlled, Double-Masked, Parallel Group, Dose Ranging Clinical Trial, 4/1/07–3/31/09

Genetech, Inc., Ranibizumab with CNV, 3/01/06–2/28/09



Hui Sun, PhD

Assistant Professor of Physiology and Ophthalmology

Associate Member of the Jules Stein Eye Institute

Research Summary

Macular Degeneration Etiology; Mechanism of Vitamin A Transport

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. Vitamin A deficiency is the leading cause of blindness in the Third World. A major puzzle in macular degeneration is the vulnerability of the macula. One potential source of tissue specificity lies in the Bruch's membrane, which is directly implicated in several major pathological phenotypes, including drusen, choroidal neovascularization, RPE detachment, and Bruch's membrane thickening. Due to the lack of inner retinal circulation, the macula relies on the Bruch's membrane for material exchange with the choroids and is more sensitive to pathological changes in Bruch's membrane. Although several newly discovered macular degeneration genes, including tissue inhibitor of metalloproteinase-3 and complement factor H, are widely expressed in many tissues, they are all known to interact with Bruch's membrane. Dr. Sun's lab is studying macular degeneration etiology by examining the nature of pathological changes in these proteins in the context of Bruch's membrane.

Vitamin A is essential for vision because it is the precursor for the chromophore of photoreceptor proteins and also plays important roles in retina development. Retinol binding protein (RBP) is the principal carrier of vitamin A in the blood. Despite overwhelming amount of evidence accumulated during the past three decades supporting the existence of a cell-surface receptor for RBP, it has eluded identification. Using a novel biochemical strategy following by

mass spectrometry, Dr. Sun's laboratory recently identified the RBP receptor as a multi-transmembrane protein of previously unknown function. Expression of this protein is highly enriched in blood-organ barriers such as the retinal pigment epithelium (RPE). The RBP receptor specifically binds to RBP and facilitates the release of vitamin A from the vitamin A/RBP complex and the transport of vitamin A into the cell. In this process, it simultaneously functions as a membrane receptor and a membrane transporter. The RBP/RBP receptor system represents the first example in vertebrates of a small molecule delivery system that involves an extracellular carrier protein but does not depend on endocytosis. Identification of the long-sought RBP receptor reveals the major physiological mechanism of vitamin A uptake in the eye and a new membrane transport mechanism in vertebrates.

Honors

Recipient of the New Scholar Award from the Ellison Medical Foundation, bestowed on March 1, 2006

Research Grants

The Ruth and Milton Steinbach Foundation: Dissection of a Molecular Pathway in Bruch's Membrane Leading to Macular Degeneration, 7/1/04–6/30/07

E. Matilda Ziegler Foundation: Mechanism of Tissue Inhibitor of Metallo-Proteinase 3 Accumulation in Macular Degeneration, 1/1/05–12/31/07

The Gerald Oppenheimer Family Foundation: Why Does an Amino Acid Change in a Serum Protein Cause Macular Degeneration?, 8/1/05–7/31/06

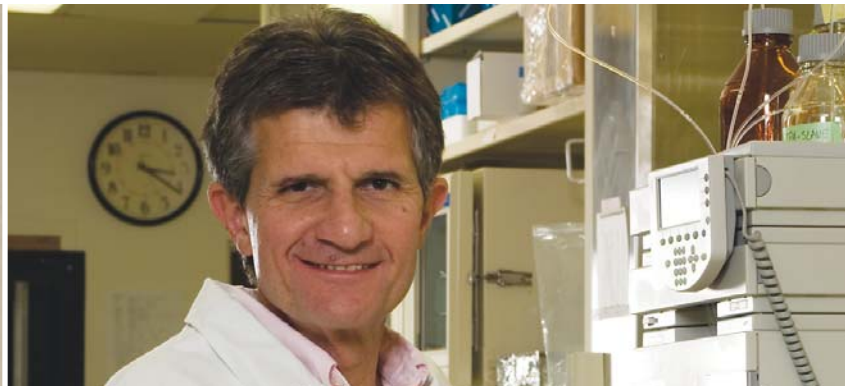
Gabriel H. Travis, MD

Charles Kenneth Feldman Professor of Ophthalmology

Associate Director of the Jules Stein Eye Institute

Co-Chief of the Vision Science Division

Member of the Jules Stein Eye Institute

**Research Summary****Biochemistry of Vertebrate Photoreceptors and Mechanisms of Retinal Degeneration**

Dr. Travis' research group uses biochemical and genetic approaches to study the function of photoreceptor cells. Vision in vertebrates is mediated by two types of light-sensitive cells—rods and cones. The light-sensitive structure of rods and cones is the outer segment, comprising a stack of flattened disks filled with opsin visual-pigment. Mice with the spontaneous mutation, *retinal degeneration slow* or *rds* completely lack outer segments. Dr. Travis originally cloned the gene for *rds* and helped to show that mutations in the corresponding human gene are responsible for an inherited blinding disease called retinitis pigmentosa in some families. One project in his laboratory is to define the role of *rds* in the folding of outer-segment discs. A second project in the Travis lab is to study the function of a newly identified transporter protein called ABCR. Mutations in the human *ABCR* gene are responsible for a childhood blinding-disease called Stargardt's macular degeneration. The Travis group generated mice with a mutation in this gene. Biochemical analysis of the phenotype in *abcr*-mutant mice led them to the molecular cause of Stargardt's disease. This understanding suggested a pharmacological strategy to reverse the biochemical defect in *abcr*-mutant mice. Testing of this strategy is underway with encouraging preliminary results. Still another project ongoing in the Travis lab 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 his group point to the existence of a new pathway for regenerating visual pigments in cones. The Travis group is currently working to purify and clone the enzymes that define this new biochemical pathway.

Public Service

Member of the Scientific Advisory Panel for The Karl Kirchgessner Foundation Vision Science Program

Reviewer for many scientific journals

Honors

Frontier Seminar Speaker at the Bascom Palmer Eye Institute in Miami, Florida, October 19, 2006

Inaugural Symposium Speaker at the Center for Sensory Biology, Johns Hopkins School of Medicine in Baltimore, Maryland, November 13, 2006

Gerald A. Fishman Lecture at the University of Illinois at Chicago in Chicago, Illinois, January 19, 2007

Recipient of the For the Love of Sight Award from Foundation Fighting Blindness, in Washington, DC, bestowed on February 14, 2007

Research Grants

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

Research to Prevent Blindness: Stein Professorship Award, 7/1/01–6/30/08

National Eye Institute: Regeneration of Cone Pigments and Treatment of Stargardt's Disease, 3/1/02–2/28/07

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

Bruce Ford and Anne Smith Bundy Foundation Grant, 8/16/05–8/15/06

National Eye Institute: Vision Science Training Grant, 9/30/05–9/29/10



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 is studying 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 has also been investigating the severe complications occasionally encountered with contact lens wear, such as neovascularization, abrasion, and corneal infection. He continues to be 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. 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

Consultant to the Ophthalmic Devices Advisory Panel of the US Food and Drug Administration

Member of the Education Committee of the Los Angeles County Optometric Society

Advisor to the Center for Keratoconus

Interviewer for University of California, Berkeley, Alumni Scholarships

Honors

Appointed Distinguished Practitioner by the National Academies of Practice (Optometry)

Xian-Jie Yang, PhD

Associate 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 make cell fate choices during formation of the retina. To achieve these goals, her laboratory uses a variety of molecular and biochemical approaches to study genes involved in cell-to-cell communication, intracellular signal transduction, and neuronal differentiation. One important tool that Dr. Yang utilizes is retroviral vector (special laboratory-based viruses) mediated gene transfer. This method allows the introduction of wild-type and mutant genes into the developing and mature retina for the analysis and rescue of gene functions. In addition, Dr. Yang's laboratory is developing viral vector based gene therapy for early onset macular degeneration and Usher syndrome, a cause of combined deafness and blindness. Her research will enhance researchers' capabilities to manipulate retinal progenitor and stem cells, thereby contributing to the effort to combat retinal degenerative diseases.

Research Grants

National Eye Institute: Cytokine Signal Transduction in Retinal Development, 9/30/05–7/31/09

The Kirchgessner Foundation: Research Award, 6/1/01–5/31/07

National Eye Institute: Myosin VIIa Gene Therapy, 3/1/03–2/28/06

Research to Prevent Blindness: Dolly Green Scholar Award, 7/1/03–6/30/07

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



Marc O. Yoshizumi, MD

Professor of Ophthalmology

Director of the UCLA Eye Trauma and Emergency Center

Member of the Jules Stein Eye Institute

Research Summary

Retinal Disease, Retinal Detachment and Vitreoretinal Surgery

Dr. Yoshizumi is developing improved surgical techniques for the treatment of retinal detachment and pathological conditions of the vitreous. He has developed new subretinal surgical procedures for the treatment of Coats' disease, a blinding disorder that affects young men. These new surgical techniques make it possible to evacuate and prevent the accumulation of subretinal cholesterol crystals, the hallmark of Coats' disease, which can result in permanent retinal detachment and lead to loss of the eye.

He is also investigating novel intraocular drugs and drug delivery systems for the treatment of intraocular infections and inflammation. In recent laboratory studies, he has developed the foundation for administration of steroidal injections directly into the eye in cases of severe intraocular infections known as endophthalmitis. The use of intravitreal injections of steroids has been shown to

significantly improve the prognosis of visual recovery if given early (within 36 hours) after the start of endophthalmitis and in combination with appropriate antibiotics. Dr. Yoshizumi's research in ocular iontophoresis, a new drug delivery system, has demonstrated that some antibiotics and antiviral agents can be effectively administered by delivering an electrically charged drug molecule through the tissue walls of the eye, enabling a high concentration of the drug to be targeted to a specific, intraocular location. Results of these studies have sparked research interest in this drug delivery system throughout the world.

Public Service

Commissioner for the California Board of Medical Quality Assurance

Member of the National Advisory Board for the Schepens International Society

Reviewer for many ophthalmic journals

Tara A. Young, MD, PhD

Assistant Professor of Ophthalmology

Director, Ophthalmic Oncology Center

Associate Member of the Jules Stein Eye Institute



Research Summary

Predicting Poor Prognosis in Ocular Melanoma

The Ophthalmic Oncology Center, under Dr. Young's direction, is researching molecular markers in ocular melanoma to provide prognostic information to patients and to better understand metastatic disease. This information may be important to establish 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. Young is one of a very few physicians who is 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 maximally benefit from a wide range of surgical prognostic and therapeutic expertise she brings to the Jules Stein Eye Institute.

Public Service

Member of the American Academy of Ophthalmology

Member of the International Congress of Ophthalmic Oncology

Member of the Association for Research and Vision in Ophthalmology

Fellow of the Royal College of Physicians and Surgeons of Canada, Ophthalmology

Reviewer for several ophthalmic journals

Research Grants

Gerald Oppenheimer Family Foundation Center Award: Genetic Aberrations in Choroidal Melanoma: A Strategy to Prevent Metastasis, 4/29/06–4/30/07

INSTITUTE MEMBERS BASED AT OTHER SITES

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 Organization of the Mammalian Retina

Dr. Brecha's research focuses on the elucidation of the cellular and neurochemical organization of the outer and inner retina. Morphological studies have defined cell types and classes, and neurochemical studies have investigated the modulatory action of neurotransmitters and neuroactive peptides. Experimental work has led to the formulation of a model to investigate the functional role of neuropeptides in the retina and provide evidence for the current hypothesis that neuropeptides are modulators of retinal neurons and circuitry. Other experimental work has suggested a vesicular mechanism underlies transmitter release from horizontal cells in the mammalian retina. These investigations are fundamental steps in establishing the retina's functional organization and provide the basis for understanding the pathophysiology of retinal dysfunction.

Michael Danciger, PhD

Researcher in Ophthalmology

Professor of Biology at Loyola-Marymount University, Los Angeles

Member of the Jules Stein Eye Institute

Research Summary

Genetic Factors Influencing Retinal Degenerations

The focus of Dr. Danciger's research is twofold: Identify genetic factors (especially those that are protective) that influence or modify the course of retinal degenerations as a result of light exposure or inherited mutations; and identify the genetic factors that contribute to age-related retinal degeneration. It is hoped that this research will open pathways of study leading to treatments that will prevent retinal degenerations or decrease their severity.

Dario L. Ringach, PhD

Associate Professor of Neurobiology and Psychology

Associate Member of the Jules Stein Eye Institute

Research Summary

Visual Neurophysiology and Perception

Dr. Ringach's research focuses on visual perception, eye movements, and neurophysiology. He is interested in cortical dynamics, circuitry, function, as well as the role of eye movements in normal visual tasks.

Terry J. Smith, MD

Professor of Medicine

Milly and Steve Liu Scholar

Chief of the Division of Molecular Medicine at Harbor-UCLA Medical Center

Member of the Jules Stein Eye Institute

Research Summary

Orbital Connective Tissue and its Involvement in Graves' Disease

Dr. Smith's research involves the molecular pathogenesis of thyroid-associated ophthalmopathy (TAO). He and his colleagues have been characterizing the unique phenotype of human orbital fibroblasts because those cells appear to be intimately involved in TAO. In particular, Dr. Smith has applied a wide array of molecular techniques to identify specific fibroblast genes and their products, which he believes lead to the dramatic inflammation and tissue remodeling that occurs in the orbit in TAO. The relationship between the orbit and thyroid gland is uncertain and why the two tissues should share involvement in Graves' disease is unknown at this time. One feature common to both, is the infiltration of activated T lymphocytes. Dr. Smith has found that both orbital fibroblasts and thyrocytes, when activated, participate in the trafficking of T lymphocytes to diseased tissues. He and his colleagues have discovered that Graves' disease-specific antibodies bind to and activate the insulin-like growth factor receptor. In so doing, powerful T lymphocyte chemoattractant molecules are expressed. His research group is currently studying intracellular signaling pathways utilized in this gene inductive process.

INSTITUTE MEMBERS BASED AT OTHER SITES

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 further understand the mechanisms mediating cell communication.

PROFESSIONAL RESEARCH SERIES

Novrouz Akhmedov, PhD

Assistant Research Ophthalmologist

Research Summary

Molecular Biology of the Retina

Dr. Akhmedov’s research interests include the identification of differentially expressed and novel retinal genes, the evaluation of their function in the maintenance of the retina, and their possible involvement in human hereditary retinal degenerative diseases. He is currently studying a recently isolated novel gene, *R7* (symbolic name), that is expressed in the retina. *R7* is predicted to encode a protein with seven transmembrane domains and is possibly involved in Retinitis Pigmentosa (RP), a severe and hereditary retinal degenerative disorder. Therefore, the primary objective of his research is to characterize the yet unknown function of the *R7* protein. In addition, Dr. Akhmedov is working to identify the genetic abnormality(s) which cause retinal degeneration in the *rd3* mouse.

Christian Altenbach, PhD

Researcher of Ophthalmology

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. This research will add to the scientific base for hereditary eye diseases.

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 was found that 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 understand the mechanisms of glaucomatous optic nerve damage and to identify novel neuroprotective therapies for glaucoma. He is studying the response of glial cells and the cell death pathway of retinal ganglion cells in experimental animal models. He is also applying pharmacologic techniques to evaluate therapies that enhance endogenous neuroprotective responses against glaucomatous and excitotoxic damage to nerve cells.

Rehwa H. Lee, PhD

Researcher of Ophthalmology

Chief of the Molecular Neurology Laboratory at the Department of Veterans Affairs Healthcare Center, Sepulveda

Research Summary

Phosphoprotein and G Protein Interactions in Vision and Blindness

Dr. Lee's research goal is to understand the mechanisms that carry out and regulate normal photoreceptor activities and cause photoreceptor cell death in animals and humans affected by inherited blindness and age-related macular degeneration. Currently, she is investigating the functional role of an important G protein regulator called phosducin in the photoreceptor cells by studying the enzymes that regulate phosphorylation (a chemical reaction that adds phosphate to a protein) and the effects of individual or coordinated phosphorylation on phosducin.

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 currently an investigator for the Hoya YA-60BB intraocular lens, which absorbs UV and Blue Light for improved protection of the retina, Alcon's AS60TT toric intraocular lens for the correction of astigmatism following cataract surgery, and 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 for the Morcher Iris Diaphragm to treat eyes with congenital and acquired iris defects. This past year he completed an investigation of the Ophtec endocapsular tension ring for the management of zonular

PROFESSIONAL RESEARCH SERIES

weakness during and after cataract surgery, which was recently approved by the FDA. He recently investigated and published a thermal imaging comparison of the Alcon AdvanTec Legacy, Bausch & Lomb Millennium, and AMO Sovereign WhiteStar phacoemulsification instruments. Other research interests include surgical and visual function outcomes of functionally monocular patients.

Roxana A. Radu, PhD

Assistant Research Ophthalmologist

Research Summary

Retinoids Metabolism in the Eye and Novel Therapeutic Approaches for Blindness Diseases Using Various Mouse Models

Dr. Radu's research activities focus on elucidating the role of two novel proteins, RGR and peropsin, expressed in the retinal pigment epithelial (RPE) cells. These related proteins have been hypothesized to participate in a light-dependent signaling pathway that regulates the enzymatic steps of the visual cycle for chromophore regeneration in RPE cells. While the biological function of peropsin is currently unknown, certain forms of inherited blindness in humans are associated with mutations in the RGR gene. Thus, further characterization of these genes could eventually lead to novel therapeutic approaches for diseases resulting from defects in the visual cycle. Dr. Radu is also evaluating novel drug-based interventions for these disorders that specifically target the vitamin A metabolism in the eye.

Silvia N.M. Reid, PhD

Assistant Research Ophthalmologist

Research Summary

X-Linked Juvenile Retinoschisis

Dr. Reid has recently cloned and characterized a mouse retina-specific gene (Xlrs1). Mutations of this gene in humans cause X-linked juvenile retinoschisis, a degenerative disease of the retina. Currently, she is studying the function of the protein product of this gene, called retinoschisin, which will lead to a better understanding of cell interactions used to articulate the architecture and the function of the retina. Additionally, she is conducting research to devise treatments for X-linked juvenile retinoschisis.

Jun-ru Tian, MD, PhD

Associate Research Ophthalmologist

Research Summary

Interaction Between Vestibulo-Ocular Reflex (VOR) and Saccadic Eye Movements During Eye-Head Coordination

Dr. Tian is investigating the mechanism of abnormal gaze reflexes that are caused by cerebellar dysfunction, inner ear disturbances, and aging. These impairments can affect eye and head coordination. Specifically, she is studying the interaction of vestibular-ocular reflex or VOR (involuntary rotation of the eyes in the opposite direction from head rotation) and saccadic eye movements that normally occur to shift the gaze promptly from one cued target location to another. Investigation of this interaction may provide insight into the neural reflex system that coordinates eye and head movement, leading to the development of synergistic strategies for compensation.

PROFESSIONAL CLINICAL SERIES

John D. Bartlett, MD

Clinical Instructor of Ophthalmology

Research Summary

Cataract Surgery

Dr. Bartlett is currently conducting clinical research on the benefits of cataract surgery in patients with good Snellen visual acuity but poor visual functioning. His recent publications have included a book chapter on the evaluation and management of Grave's orbitopathy and an article detailing specialized cataract surgery techniques for use in patients with small pupils. 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.

Melissa W. Chun, OD

Assistant Clinical Professor of Ophthalmology

Director of the UCLA Vision Rehabilitation Center

Research Summary

Keratoconus

Dr. Chun's research interest is in the area of keratoconus, a thinning disorder of the central cornea, resulting in visual distortion. She is a co-investigator in the Collaborative Longitudinal Evaluation of Keratoconus (CLEK) study, funded by the National Eye Institute. This multicenter, observational study was established to prospectively characterize vision, corneal changes, and patient quality of life findings in keratoconus and to determine the progression of changes occurring with keratoconus over time.

Susan S. Ransome, MD

Clinical Instructor in 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 with HIV-infected individuals in the era of potent antiretroviral therapies.

David Sarraf, MD

Assistant Clinical Professor of Ophthalmology

Research Summary

Phenotyping of Retinal Disease

Dr. Sarraf is interested in hereditary degenerative diseases of the retina. He has recently characterized a previously unreported hereditary syndrome in which older members of three different families demonstrate age-related macular degeneration, while younger members show retinitis pigmentosa. Dr Sarraf is also interested in innovative imaging systems of the retina and has conducted retrospective studies investigating the use of OCT imaging of the macula in various retinal diseases, including solar maculopathy and crystalline maculopathy and hopes to use this imaging system to better elucidate the different stages of the occult form of wet age-related macular degeneration. Lastly, Dr Sarraf is conducting observational studies to better characterize and understand existing retinal conditions and to describe new retinal syndromes.

PROFESSIONAL CLINICAL SERIES

Meryl L. Shapiro-Tuchin, MD

Assistant Clinical Professor of Ophthalmology

Director of the Ophthalmology Inpatient Consultation Service

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 and to students in the Ophthalmic Assistant Training Program.

Federico G. Velez, MD

Clinical Instructor in 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 strabismus (esotropia) and divergent strabismus (extropia).

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

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

Founding Chairman of the Department of Ophthalmology

Founding Director of the Jules Stein Eye Institute

Richard W. Young, PhD

Professor of Neurobiology Emeritus

Member of the Jules Stein Eye Institute

LECTURERS

Kathleen L. Boldy, VMD

Lecturer in Ophthalmology

Samuel M. Genensky, PhD

Lecturer in Ophthalmology

Annual Report 2006-2007

Jules Stein Eye Institute

Programs

PATIENT CARE SERVICES

The Institute's program of care for patients encompasses the full range of eye diseases. Nationally and internationally renowned faculty, along with highly skilled clinical fellows and physician residents, provide integrated consultation and treatment, including surgical services. They 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. Recent scientific advances have made available a host of new diagnostic and therapeutic procedures through the Institute's comprehensive services.

Faculty Consultation Service

Institute faculty provide direct consultation and treatment, including surgery, to patients through the Ophthalmology Faculty Consultation Service. This service is available by referral and offers both physicians and patients a valuable and unique resource for special vision problems. Faculty have extensive, advanced training in ophthalmic sub-specialties, which enables them to offer emerging therapies.

University Ophthalmology Associates

Comprehensive and subspecialty eye care in all medical and surgical areas of ophthalmology and refractions for eyeglasses are offered through University Ophthalmology Associates (UOA). **Dr. John D. Bartlett** leads UOA as Medical Director. Ophthalmologists who are members of the UCLA Medical Group staff the practice.

Inpatient Services

Inpatient ophthalmology services are provided within the medical center to both pediatric and adult patients.

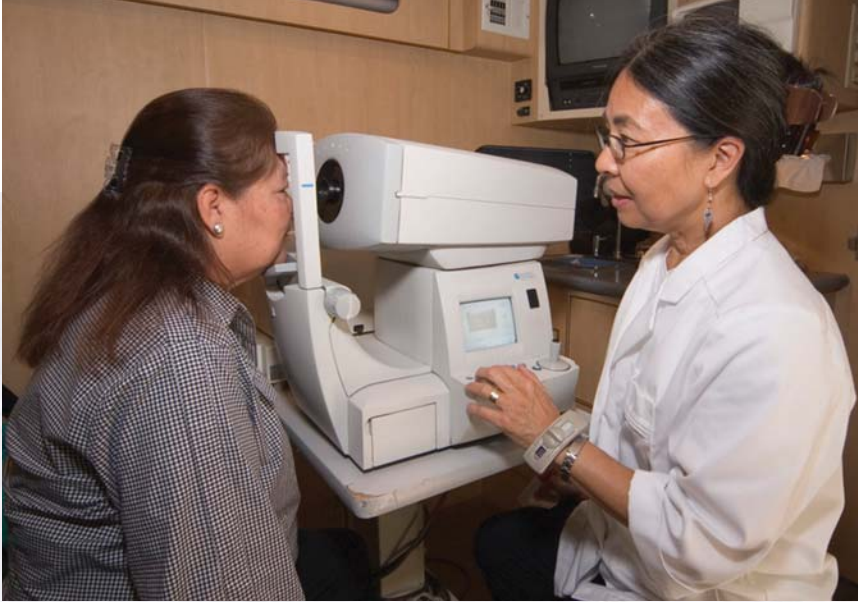
The Ophthalmology Inpatient Consultation Service, operating 24 hours a day throughout the UCLA Medical Center, provides consultation and treatment to patients admitted to the hospital's medical and surgical inpatient services. Led by **Dr. Meryl L. Shapiro-Tuchin**, the consultation team consists of physician resident staff. Subspecialty coverage from faculty is called upon 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 and specially equipped operating rooms. Additionally, a number of laser surgeries, such as laser-assisted *in situ* keratomileusis (LASIK) and certain aesthetic laser surgeries, are performed in procedure rooms located in the outpatient suites. Faculty 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.

SUMMARY OF PATIENT CARE STATISTICS

	2005-2006	2006-2007
Faculty Consultation Service		
Patient visits	63,973	63,146
University Ophthalmology Associates		
Patient visits	20,939	19,653
Inpatient Consultation Service		
Patient evaluations	197	331
Clinical Laboratories		
Procedures	22,550	24,699
Surgery Services		
Number of procedures	7,746	7,462
Mobile Eye Clinic		
Number of patients seen	4,480	3,792
Ocular abnormalities	42%	38%
Number of trips	179	165



Orthoptist, Ms. Faye Oelrich autorefracts a patient on the Mobile Eye Clinic

UCLA Mobile Eye Clinic

The UCLA Mobile Eye Clinic, a 39-foot-long bus specially equipped with eye examination equipment, was donated to the Jules Stein Eye Institute in 1996 by The Karl Kirchgessner Foundation, Barbara Mott McCarthy, and the Burton C. Bettingen Corporation. This is the third bus to be donated for this purpose since the program's founding by the Uncle Claude Fund in 1975. The Mobile Eye Clinic's staff of trained ophthalmic personnel include **Drs. Benjamin C. Lusk, Lawrence M. Hopp, and Sidney W. Penn;** and are led by **Dr. Anne L. Coleman.** They provide general eye care to over 5,500 adults and children annually throughout Southern California, traveling to schools, shelters, community health and senior citizen centers, health fairs, and organizations that assist homeless and low-income families.

Vision services offered by the UCLA Mobile Eye Clinic are ophthalmic examination and refraction, diagnosis of potential or existing eye disorders, treatment of some ocular diseases, and appropriate referral of patients who need additional services.

Eye and Tissue Bank and Donor Eye Program

The Donor Eye Program, under the direction of **Dr. Anthony J. Aldave,** was established at the Jules Stein Eye Institute to inform the public of the need for eye tissue and to retrieve donated eyes. The program endeavors to increase the number of eyes available for

corneal transplantation and for scientific study of underlying causes of various eye diseases. The UCLA Eye and Tissue Bank has established a strong relationship with the Doheny Eye Bank to ensure coordinated efforts.

Potential donors are recruited through patient contact by ophthalmology faculty and by a donor information brochure containing all of the documents necessary for donating to the UCLA Eye and Tissue Bank of the Jules Stein Eye Institute in accordance with the Uniform Anatomical Gift Act.

In the two decades that the Eye and Tissue Bank has been in operation, the waiting time for corneal transplantation has decreased from several months to under two weeks, not only at the Jules Stein Eye Institute, but at the UCLA-affiliated hospitals where this surgical procedure is performed. For emergency cases, tissue is available within 24 hours.

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 in addition to standard approaches for a gamut of eye disorders. In addition to comprehensive treatment, the centers provide both patients and physicians expert diagnostic and consultation services for diseases that are difficult to identify and treat. Ophthalmology faculty work closely with other specialists within the Jules Stein Eye Institute, as well as with other UCLA clinical departments, to create a multidisciplinary team customized for each patient's unique medical needs. Services provided by the centers may be inpatient or outpatient in nature, drawing upon the surgical skills of ophthalmology faculty when necessary, and coordinated with patients' nonvision treatment needs when appropriate.

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 rapidly earned a reputation for high quality, individualized care delivered by surgeons trained in both ophthalmic and plastic surgery.

Surgical services offered in the Aesthetic Center include laser-assisted upper and lower eyelid blepharoplasty, endoscopic forehead lifting, liposuction, lifting of the neck and face, and Restylane and Botox injections to smooth facial lines. Center physicians have pioneered surgical techniques to improve the normal function and appearance of the face and often receive referrals for correction of complications from previous plastic surgery.

A major goal is to educate patients on what they might achieve with aesthetic surgery. In conjunction with in-depth consultation, videotapes, and digital photography are used to facilitate discussion. A comfortable,

private suite provides complete and confidential pre- and post-operative care, as well as dedicated surgical facilities. A range of post-surgical nursing options are available from home care to the Institute's ophthalmic inpatient unit.

Aesthetic Center faculty conduct clinical research that focuses on improving an understanding of skin processes, including aging and healing, and on the development of new techniques and substances for aesthetic surgery.

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 and is supported by private donations including an endowment established by The Ahmanson Foundation. Colleagues with expertise in epidemiology, biostatistics, health policy, public health, and international health collaborate with ophthalmologists around the world to advance knowledge related to the causes and prevention of specific eye diseases.

A major focus of the Center for Eye Epidemiology is the assessment of elderly patients' health care. Faculty are studying the Medicare database maintained by the Health Care Finance Administration (HCFA) to identify and evaluate trends in the delivery of eye care. Utilizing epidemiological models, faculty are also investigating the prevalence and familial inheritance of age-related macular degeneration and glaucoma, both leading causes of vision loss in the elderly population.



Dr. Barry Weissman (center) meets with Dr. Bartly Mondino (left) and a patient to discuss the Institute's custom contact lens work for corneal irregularities due to keratoconus, trauma, infection, or surgical complications.

Center to Prevent Childhood Blindness

The Center to Prevent Childhood Blindness, under the direction of **Dr. Sherwin J. Isenberg**, is committed to reducing blindness in infants and children. Currently 1.5-million children worldwide are blind. Due to premature births, genetic disorders, and infections, blindness in infants and children tends to be fundamentally different from the causes of adult vision loss. A dedicated board of physicians and basic scientists at UCLA including **Leonard Apt, MD**, **Gary N. Holland, MD**, **Steven Nusinowitz, PhD**, and **Irwin Weiss, MD**, have joined forces to conduct collaborative research, education, and patient care programs designed to increase awareness and help treat pediatric blindness. A significant emphasis of the center is on a 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. Another emphasis is to develop very inexpensive ocular antibiotics for underdeveloped areas to treat corneal infections that now blind more than 400,000 children worldwide.

Additional private support will enable center physicians and basic scientists to develop new medical and surgical treatment options for boys and girls worldwide.

Clinical Research Center

The Jules Stein Eye Institute's Clinical Research Center functions under the direction of **Dr. Gary N. Holland**, with Co-Directors **Drs. Joseph Caprioli**, **Steven D. Schwartz**, and **Ralph D. Levinson**. 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 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 are currently conducting 44 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 the complications of contact lens wear, such as neovascularization, abrasion and corneal infection; and systems of oxygen supply to the corneas of contact lens wearers.

Dr. Anne Coleman (left) consults with Dr. Carol Mangione, Professor of Medicine and Public Health at UCLA.



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 medical consultation and treatment services ranging from basic vision screening to the management of severe eye disease. Established almost a decade ago, the center has since contributed significantly to the understanding, treatment, and prevention of diabetic eye disease. Currently, the focus is on innovation in technologies and techniques that will expand the standard of treatment, such as

- new lasers and unique strategies for employing existing lasers,
- refinement of microsurgical techniques specific to diabetic eye diseases, and
- non-traditional treatment approaches.

The Center treatment philosophy is based upon the systemic nature of diabetes and stresses viewing the patient as a whole. In providing the best eye care, ophthalmologists take into consideration complications and requirements of diabetes that lie outside the field of ophthalmology. Care is facilitated by a diabetes patient coordinator who also provides education and psychosocial support to reinforce disease prevention, treatment applications, and lifestyle changes. Treatment interventions include laser and ophthalmic surgery. Recognizing the special care needed for diabetics in any ophthalmic 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. 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 followup.

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.

Primary surgical repairs are performed immediately for new trauma while secondary repairs are usually scheduled. Less than half of patients experiencing ocular trauma require immediate surgery and, in many cases, treatment involves medical follow-up alone.

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 include genetic and environmental factors that may cause eye disease and pharmacologic and natural agents that may prevent it. The latter includes life style modification, nutrition, vitamins, herbs, acupuncture, and massage. The following projects were funded by the Gerald Oppenheimer Family Foundation Center for the Prevention of Eye Disease in 2006-2007:



Dr. Alex Yuan (center) with Gail and Gerald Oppenheimer, whose generous pledge funded Dr. Yuan's research project.

Identification of the Genetic Basis of Keratoconus Using a Candidate Gene Approach Incorporating Gene Expression and Linkage Analysis Data

Anthony J. Aldave, MD

Associate Professor of Ophthalmology

Vivek S. Yellore, MD

Post-graduate fellow

Department of Ophthalmology

The Neural Mechanisms Underlying Visual Attention

James W. Bisley, PhD

Assistant Professor of Neurobiology

Member, Jules Stein Eye Institute

Tracking Eye Movements by Imaging the Corneal Vasculature

Dario Ringach, PhD

Associate Professor of Neurobiology

Member, Jules Stein Eye Institute

Genetic Aberrations in Choroidal Melanoma: A Strategy to Prevent Metastasis

Tara Young, MD, PhD

Assistant Professor of Ophthalmology

Co-Director, Ophthalmic Oncology Center

Preventing Blindness Using Embryonic Stem Cell Microvesicles

Alex Yuan, MD, PhD

EyeSTAR Trainee

Debora Farber, PhD, DPhc

Karl Kirchgessner Professor of Ophthalmology

Conical Electron Tomography as a Tool to Understand Lens Transparency and Cataract Formation

Guido A. Zampighi, PhD

Professor of Neurobiology

Member, Jules Stein Eye Institute

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

Laser Refractive Center

The Laser Refractive Center is under new direction from **D. Rex Hamilton, MD**. Founded in 1991, the Center utilizes the skills of faculty specializing in refractive corneal surgery, including clinical and research applications of new laser technology (one of a few in the United States to pioneer investigations into laser eye surgery). The Laser Refractive Center provides patients with all standard refractive procedures and offers emerging therapies as they become available. The most common forms of refractive vision correction are:

- Custom LASIK (laser *in situ* keratomileusis)
- Custom LASEK (laser epithelial keratomileusis)
- Presbyopia-correcting intraocular lens implant
- Custom PRK (photo refractive keratectomy)
- AK (astigmatic keratotomy)
- CK (conductive keratoplasty)
- Phakic intraocular lenses
- Intacts™

Patients referred to the Laser Refractive Center undergo a complete ocular examination, including advanced corneal topographic maps, which are obtained so as to analyze corneal shape and identify conditions that may interfere with surgical correction. Candidates for laser surgery receive intensive education so that they understand the benefits, risks, and alternatives to surgery.

Dr. Anthony Aldave (left) and Dr. Rex Hamilton (right) with a patient in the UCLA Laser Refractive Center.



Clinical trials for new refractive devices and techniques are open to patients on an ongoing basis. These include studies for the treatment of nearsightedness and farsightedness, including presbyopia, that are not available in community-based laser refractive centers.

Macular Disease Center

The Macular Disease Center, under the direction of **Drs. Steven D. Schwartz** and **Christine Gonzales**, was created in 1994 in response to the growing, national incidence of macular degeneration.

The thrust of the Center 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.

A monthly support group meeting for patients with macular degeneration and their families is sponsored jointly by the Macular Disease Center and the Braille Institute. The program was initiated to assist people who are dealing with sight loss as a result of this disease.

Meetings consist of discussions and lectures around topics such as low vision technology and training, current research, and maximizing visual possibilities in daily living.

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 a broad spectrum of coordinated care that bridges specialties both within the Institute and outside the field of ophthalmology. The Center has a long history of participating in clinical studies and drug therapy investigations that have furthered the understanding and treatment of inflammatory eye diseases.

Center faculty were the first to describe cytomegalovirus (CMV) retinitis as an ophthalmic manifestation of AIDS. Their ongoing investigations have made the Ocular Inflammatory Disease Center a premier site of expertise for AIDS-related ophthalmic disease in the country. Additionally, the Center has world-renowned scientists and clinicians working on the research and treatment of uveitis. Other common inflammatory eye diseases treated in the Center are corneal ulcers, endophthalmitis, and autoimmune diseases of the cornea and ocular surface.

Due to the frequency with which ocular inflammatory diseases are associated with systemic diseases, the Ocular Inflammatory Disease Center physicians routinely collaborate with non-ophthalmologists. During each evaluation, a determination is made regarding additional services or specialties that may be necessary as part of a patient's care. The Center offers a Corneal Ulcer Service and an HIV Ocular Disease Service staffed by clinical coordinators 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 also available.

Ophthalmic Oncology Center

The Ophthalmic Oncology Center, under the direction of **Drs. Bradley R. Straatsma** and **Tara Young**, serves adults and children with tumors of the eye, eyelid, and orbit. Established in the early 1980s, the Center is highly regarded for the diagnosis and management of ocular melanoma and serves as a hub for national, long-term studies investigating the progression and outcome of the disease and its treatment.

Patients with confirmed ocular melanoma are offered options for care often not available in the community. These include radioactive plaque therapy, transpupillary thermotherapy (TTT), enucleation, and laser surgery. Treatment is closely coordinated with UCLA internists, oncologists, and radiation oncologists. Patients with other tumors and simulating diseases are closely followed by Center physicians.

Melanoma of the eye is the focus of major research activity in the Ophthalmic Oncology Center. The Collaborative Ocular Melanoma Study (COMS), sponsored by the National Eye Institute, is a multicenter, randomized study to evaluate the effectiveness of standard treatment options, as well as treatment effects and quality of life. For medium-size choroidal melanoma, survival results of the clinical trial comparing enucleation with radioactive plaque therapy were published in 2001. Assessment of quality of life of patients with ocular melanoma was presented with ocular melanoma was presented in 2002. In 2003–2004, COMS publications reported visual acuity three years after brachytherapy for choroidal melanoma and presented data regarding second cancers in patients with choroidal melanoma.

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. The professional and technical expertise available to patients, many of whom are referred for definitive diagnosis, is unparalleled.

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**, brings multidisciplinary expertise to the treatment and study of orbital diseases arising from trauma, cancer, inflammation, and infection. The Center was founded in 1991, building upon an established, international reputation in the treatment of orbital diseases. Care is organized around a team of experts in ophthalmology, neuroradiology, neurosurgery, head and neck surgery, radiation oncology, and craniofacial surgery who bring to the treatment of orbital diseases a depth of knowledge and experience not available elsewhere in Southern California.

Both medical and surgical management are employed in the Center; however, surgery is the primary treatment approach. Modern ophthalmic operating rooms within the Institute provide advanced instrumentation for ophthalmic surgery, oculoplastic surgery, orbital bony reconstruction, and orbital microsurgery. The treatment team performs procedures 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 Orbital Disease Center has an active program on Graves' disease. New surgical techniques are evaluated for patients with Graves' disease and basic science research is carried out to further understand the disease.

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 for patients with low vision and maximize their visual function and quality of life. Low vision is defined as best corrected vision of 20/70 or worse in the better eye. Though less restrictive than legal blindness (20/200 or worse) or total blindness, low vision can nevertheless limit daily life. Patients with low vision have a wide range of eye diseases, including age-related macular degeneration, diabetic retinopathy, glaucoma, corneal disease, and retinitis pigmentosa.

The Vision Rehabilitation 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 technical devices that can help patients adapt to their vision restrictions. Center services are customized for each patient's individual needs. From simple techniques that optimize lighting and contrast, such as pouring coffee into a white mug, to sophisticated devices like a computer system that scans written materials and reads it back in a synthesized voice, the center offers comprehensive options. One unique feature 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

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 by enlarging the parameters employed to assess the clinical course and effectiveness of treatment. Additionally, the clinical laboratories enlarge 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.

Glaucoma Photography Laboratory

The Glaucoma Photography Laboratory, under the direction of **Dr. Joseph Caprioli**, takes a series of specialized photographs for new and follow-up glaucoma patients to assist the ophthalmologist in the management of patients with this disease. All of the photographic modalities capture varying aspects of the optic nerve fiber layer, a critical component in predicting, diagnosing, and monitoring glaucoma. Additional abnormalities associated with glaucoma and other eye diseases can also be measured and visually represented.

The GDX Nerve Fiber Analyzer uses 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) uses 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. Four types of tests are performed. Electro-oculography (placing electrodes around the eye) evaluates nerve muscle palsies and lost or slipped eye muscles. 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.

Basic science research is an integral component of the laboratory. Using donor tissue, investigators further their understanding of eye movement as well as diseases of the eye, brain, and muscles, and related tissues of the inner ear. The research goals are twofold: To advance etiological theories of disease; and to develop new tests and new applications of existing tests that will aid in the diagnosis of eye diseases.

Ophthalmic Photography Clinical Laboratory

The Ophthalmic Photography Clinical Laboratory, under the direction of **Dr. Christine Gonzales**, 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 in the laboratory 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. Anurag Gupta** and **Kevin M. Miller**, performs clinical examinations that are useful in diagnosing both ocular and orbital eye diseases. Patients are referred for ocular ultrasonic examination when internal structures of the eye cannot be seen directly, or to differentiate known or suspected ocular pathology.

Diagnostic examinations performed in the laboratory 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.

Ophthalmology Diagnostic Laboratory

The Ophthalmology Diagnostic Laboratory, under the direction of **Dr. Joseph Caprioli**, offers four quantitative tests, including measurement of vision acuity and field of vision. The potential acuity meter (PAM) and the laser interferometer measure potential vision acuity, usually preparatory to cataract surgery for patients with complicating eye diseases such as macular degeneration. Patients with little potential visual acuity are often not candidates for surgery. The Goldmann perimeter uses manual perimetry to measure the field of vision (including peripheral vision). Patients with retinal degenerations are commonly referred for this type of test. Lastly, the endothelial cell count uses a high-powered microscope and video camera to photograph the inner layer of the cornea and corneal thickness. Patients with a low cell count do not have a healthy cornea and consequently may not be good candidates for surgery due to difficulty in healing.

Perimetry Laboratory

The Perimetry Laboratory, under the direction of **Dr. Joseph Caprioli**, performs visual field examinations that determine the sensitivity of central and peripheral vision. Examinations are conducted with advanced Humphrey automated perimetry equipment. Testing detects visual field deficits associated with certain kinds of eye diseases such as glaucoma, retinal disorders, and neuro-ophthalmic conditions. Utilizing pinpoints of light around a perimetry bowl, the test evaluates different areas of the field of vision. Test results are computerized and compared to a range of normal values by age group. Patterns of diminished fields of vision are related to specific eye diseases. Perimetry testing is employed for diagnostic purposes and to monitor visual field sensitivity over time, especially for glaucoma patients. Both standard and shortwave automated techniques are available, in addition to frequency-doubling perimetry and motion-detection perimetry.

Visual Physiology Clinical Laboratory

The Visual Physiology Clinical Laboratory, under the direction of **Drs. Michael 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 possibilities. Electrophysiological and psychophysical testing is performed in the laboratory. Electrophysiological tests, including the electroretinogram (ERG), electro-oculogram (EOG), and visually evoked potential test (VEP), record electrical signals from different layers of the visual system, much like an electrocardiogram (ECG) records electrical signals of the heart. Psychophysical tests, like reading an eye chart, require the participation of the patient in specific tasks to evaluate visual functions like color blindness and contrast sensitivity. In many cases, both electrophysical and psychophysical tests are performed together in order to obtain the optimum amount of information for diagnosis.



First-year residents are (from left) Drs. Sumit Shah, Allen Hu, Tania Tai, Ahmad Mansury, Tanvi Shah, Allend Chiang, and Pradeep Prasad.

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. Integrated, multi-faceted programming offers a stimulating environment for learning and for meeting degree and certificate requirements. A strong commitment to teaching by Institute faculty assures that ophthalmic education is maintained as a priority amidst the imperatives of patient care and research.

The training programs at the Institute 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, including many that require surgical intervention, offers innumerable training opportunities for both residents and clinical fellows. The availability of over 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 are afforded 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. The program consists of lectures, demonstrations, instructions on ophthalmic history-taking, and techniques for examination of the eye and related structures of the visual system. Students in small groups are assigned to clinical instructors for practical and personalized training in examination procedures and in the use of ophthalmic instruments. In this way, each student is exposed to major ophthalmic diseases, significant ophthalmic findings, and actual examination experience.

Third-year medical students complete a one-week rotation in ophthalmology. Instruction includes lectures, reading, computer-assisted learning, discussion, demonstrations, and patient examinations. The basic schedule for this rotation provides instruction in clinical ophthalmology and participation in departmental seminars and conferences. Students observe and participate in patient care and experience a concentrated period of basic instruction in ophthalmology.

The fourth-year medical student program is made up of various elective programs, including the Advanced Clinical Clerkship in Ophthalmology. Elective courses provide intensive exposure to clinical ophthalmology and basic visual sciences.

Second-year residents are (from left) Drs. Marc Shomer, Lauren Eckstein, Karen Shih, Jacob Khoubian, Yvonne Ou, Stacy Pineles, and Lucy Shen.



UCLA Ophthalmology Residency Program

The Department of Ophthalmology conducts an accredited three-year residency program for 21 residents; seven residents begin training each July. The full breadth of ophthalmology training is offered, including experience in general ophthalmology and in the following ophthalmic subspecialties: cornea-external ocular disease, glaucoma, neuro-ophthalmology, ophthalmic anesthesiology, orbital and ophthalmic plastic surgery, pediatric ophthalmology and strabismus, retinal disease, ophthalmic genetics, ocular inflammatory disease, ophthalmic oncology, and vision science.

Training incorporates the resources of several major medical centers in Los Angeles: UCLA Jules Stein Eye Institute; Harbor-UCLA Medical Center; Olive View-UCLA Medical Center; and the Veterans Affairs Greater Los Angeles Healthcare System at West Los Angeles and Sepulveda. Every resident has exposure to each medical center during the course of training, thereby ensuring clinical experience with a wide range of problems and patient populations. Certification by the American Board of Ophthalmology is a natural objective of the program.

Clinical Rotations

Clinical rotations at the Jules Stein Eye Institute include both general ophthalmology and subspecialties. In general, ophthalmology, residents work as a team, handling clinics, emergencies (including overnight in-house call), 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.

During the first year of training, residents are given a firm clinical foundation with an emphasis on general ophthalmology. They develop skills in refraction, diagnostic evaluations, and the medical management of ophthalmic problems. They also begin their surgery training and take an intensive rotation in ophthalmic pathology under the direction of a full-time ophthalmic pathologist. In the second year, residents begin in-depth training in all of the ophthalmic subspecialties. During the third year, they assume greater responsibilities for medical and surgical patient care and participate in supervision and teaching of medical students and first- and second-year ophthalmology residents. They also engage in administrative duties at the various medical centers.

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 (AAO) 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. These conferences sometimes consist of visiting faculty lectures. Residents attend according to their rotations and interests. First-year residents also meet weekly with faculty members in a course designed specifically for their needs as new trainees. There are additional opportunities for residents to participate in any of the extensive continuing education programs conducted by the department and the Institute. All residents attend at least one annual meeting of the American Academy of Ophthalmology in their second or third year of the program.



Third-year residents are (from left) Drs. Hajir Dadgostar, Peter Kappel, Patty Lin, David Goldenberg, Tien-An Yang, Louis Chang, and Eddy Nguyen.

Surgery Training

Residents begin to perform surgery in their first year of training and continue to operate throughout their residencies. Surgical cases are assigned commensurate with level of training and experience. First-year residents begin in the Institute's microsurgery laboratory, learning basic techniques. The laboratory is available to residents throughout their training. Residents first assist on selected surgical cases; by the end of their residencies, 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 an ongoing clinical or basic science research project 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 opportunity is especially geared to physicians committed to academic careers in ophthalmology, combining basic science with clinical practice in a 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.

The six-year curriculum is a blend of graduate courses, laboratory research, and clinical training. The trainee is expected to commit three years to the residency program in ophthalmology and conduct vision science research for three years. Each trainee's educational course is individualized depending on his or her background, interests, and needs. The goal of the program is to generate leaders in ophthalmology who are investigators as well as practitioners—physicians who are as comfortable at the laboratory bench as in the examining or operating rooms.

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

JSEI Fellows are (from top left) Drs. Julie Forister, Amish Purohit, Carlos Souza, Yuri Oleynikov, Mario de Andrade, Duc Tran, Seok Hwan Kim, Jaehong Ahn, (seated from left) Joanne Bolinao, Parnchat Pukrushpan, Noa Ella-Dalman, Mehrnoosh Saghizadeh, Jane Loman, and Riki Kawaguchi.



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. Time is allotted appropriately for this experience, and its value is enhanced by careful supervision, availability of laboratory facilities, and access to technical assistance.

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 the graduates of residency training programs for careers in academic comprehensive ophthalmology, emphasizing the latest techniques in cataract surgery and combined cataract-refractive surgery. The learning experience is augmented by participation in the Annual Postgraduate Seminar and Grand Rounds; and by interaction with members of the volunteer clinical faculty.

Clinical experience is gained by working under the program director in the comprehensive ophthalmology consultation suite and University Ophthalmology Associates. Surgical experience is gained by assisting

the faculty preceptor, performing independent and supervised surgery, and supervising residents. Although cataract surgery accounts for the majority of surgery performed by the service, the fellow gains experience in many areas, including anterior segment surgery, laser refractive surgery, strabismus surgery, glaucoma filtration surgery, oculoplastics, and some retinal laser procedures.

Teaching is an integral part of the fellowship experience. The fellow is expected to be an instructor in an annual anterior segment surgery course, the lens and cataract basic science course, journal club, and other courses offered by the Comprehensive Ophthalmology Division. The fellow also is expected to instruct medical students and speak at community hospitals in the southern California area through arrangements with the UCLA Medical Center Visiting Speakers Program. The fellow presents cases at Grand Rounds and participates as an instructor or lecturer at courses offered during the annual American Society of Cataract and Refractive Surgery and American Academy of Ophthalmology meetings.

The fellow is expected to undertake several clinical research projects during the year. A microsurgery laboratory is available for surgical experiments. Collaboration with members of the vision science faculty can be arranged for projects of mutual interest. Research findings are submitted for presentation at national meetings and significant findings are submitted for publication. The fellow is required to present the results of one study at the Jules Stein Eye Institute's Research and Alumni Day and Post-ARVO Seminar.

Fellowship in Contact Lens Practice

The one-year fellowship in contact lens, under the direction of **Drs. Barry A. Weissman** and **Melissa W. Chun**, offers optometrists and ophthalmologists advanced study in accordance with the program's mission to

- provide state-of-the-art clinical training in contact lens care,
- foster scientific investigation of related topics in the study of contact lenses and corneal physiology,
- prepare individuals to deliver excellence in clinical care,
- encourage individuals in careers in academic or industrial settings, and
- promote professional relations between optometry and ophthalmology.

The contact lens fellow participates in patient care in the Jules Stein Eye Institute Contact Lens Center. Working with optometrists, ophthalmology residents, and ophthalmology fellows of various subspecialties provides excellent 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, aphakia (both adult and pediatric), presbyopia, post surgical corneas (including corneal grafts and keratorefractive surgery), irregular corneas secondary to trauma, and diseased corneas (including keratoconus and healed herpetic keratitis).

The fellow is 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, the fellow becomes 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. More than one day per week is allocated to research activities.

Fellowship in Cornea-External-Ocular Diseases and Refractive Surgery

Under the direction of faculty members **Drs. Anthony J. Aldave, Bartly J. Mondino, Gary N. Holland, Barry A. Weissman,** and **D. Rex Hamilton**, in the Cornea-External Ocular Disease & Uveitis Division, one-year fellowships are offered in the study of diseases of the cornea, external eye, anterior segment, and refractive surgery. Each faculty member has an area of specialization, creating a broad clinical and laboratory training experience for applicants who are preparing for an academic career in ophthalmology. Clinical experience consists of participation in the cornea faculty practices, including surgery, and assisting and/or directing the care of emergency cornea cases at the Jules Stein Eye Institute. Fellows work in the microsurgical laboratory at the Institute, developing their microsurgical skills, and assist in teaching these 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 Jules Stein Eye Institute, fellows supervise patient care in the cornea clinics at the West Los Angeles Veterans Affairs Healthcare Center and at Harbor-UCLA Medical Center. Experience and knowledge concerning contact lens fitting, contact lens management and related aspects of corneal physiology are also obtained.

Research may be clinically oriented or geared to basic science. Faculty are actively engaged in research at the Institute and collaborate with fellows on worthwhile projects of mutual interest. 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 Giacconi,** and **Simon K. Law**, the one- or two-year glaucoma fellowship provides clinical and laboratory experience in glaucoma diagnosis and management for physicians who are preparing for an academic career in ophthalmology. Clinical experience is gained by working with the faculty advisor in the consultation suite examining patients and participating in clinical and surgical management. Fellows assist in glaucoma surgical cases and perform surgery under the guidance of the program director. They work in the glaucoma microsurgical laboratory, participate in microsurgery courses for resident and practicing physicians, assist in the glaucoma clinic, and develop expertise in the various diagnostic techniques used in glaucoma treatment through preceptor-type relationships with faculty.

Fellows participate in glaucoma teaching performed at the Jules Stein Eye Institute and affiliated institutions, present cases at teaching rounds, and prepare presentations for regularly scheduled glaucoma conferences. They participate in teaching of staff, students, and residents through practical and didactic presentations, and improve their techniques of examination and interpretation of ancillary tests.

Fellows undertake at least one research project that can be accomplished during the fellowship period. This project, which may be a clinical study or an applied research project in the laboratory, is performed in cooperation with the faculty advisor. Use of the excellent facilities in eye pathology is encouraged. Vision scientists, including biochemists, physiologists, pathologists, anatomists, and clinical ophthalmologists, are amenable to collaborating on worthwhile projects.

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 fellow is encouraged to develop rapport with members of the neurology and neurosurgery services at UCLA, and

to become aware of neuro-ophthalmologic problems elsewhere in the hospital. The David Geffen School of Medicine at UCLA maintains major clinical and research programs in neurology, neurosurgery, and neuroradiology.

The fellow attends the weekly Neurology-Neurosurgery Grand Rounds, takes an active part in seeing relevant inpatient consultations throughout the medical center, and assists in selected surgical procedures of interest to neuro-ophthalmologists. Attendance at the weekly neuroradiology teaching conferences is encouraged. Participation in clinical research, e.g., studies of eye movement disorders and disturbances of visual pathways, is expected. Time is allotted for scientific reading and for research activities.

Fellowship in Orbital and Ophthalmic Plastic Surgery

Fellowships in orbital and ophthalmic plastic surgery, under the overall supervision of **Drs. Henry I. Baylis, Raymond Douglas, Robert Alan Goldberg, Jonathan Hoening,** and **Norman Shorr**, provide special training for physicians who have completed ophthalmology residency training and are interested in specializing in orbital and adnexal disorders and in aesthetic and reconstructive orbitofacial surgery. The Orbital and Ophthalmic Plastic Surgery Service conjoins efforts of the neuro-ophthalmology, neuroradiology, neurosurgery, and ocular pathology units in diagnosis and treatment of disorders affecting the optic nerve, orbit, and adjacent tissues (paranasal sinuses and intracranial tissues) that affect vision and ocular motility. The fellowship program is approved by the American Society of Ophthalmic Plastic and Reconstructive Surgery and the American Academy of Cosmetic Surgery.

The fellowship program includes ophthalmic plastic surgery outpatient consultation, inpatient activities, and surgical procedures at the Jules Stein Eye Institute and affiliated hospitals. Fellows participate

extensively in the 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.

As part of the Institute's orbital and ophthalmic plastic surgery continuing education program, several surgical and dissection workshops, including a seminar on eyelid and orbit surgery, are held each year. The highlight of these workshops is the one-on-one teaching between faculty members and participants. Fellows are an integral part of these courses.

Fellowship in Pediatric Ophthalmology and Strabismus
Fellowships in pediatric ophthalmology and strabismus provide in-depth clinical and laboratory experience for individuals preparing for academic careers in ophthalmology. The division offers one-year fellowships for U.S. licensed physicians as well as ophthalmologists from abroad, under the direction of **Drs. Arthur L. Rosenbaum, Sherwin J. Isenberg,** and **Joseph L. Demer.**

Clinical experience for each fellowship 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 areas of interest in pediatric ophthalmology encompass experience in the private consultation suites and participation in pediatric cases that are receiving care through other services.

Fellows may collaborate with vision scientists, including biochemists, physiologists, pathologists, and anatomists, on research projects of mutual interest.

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, Christine R. Gonzales, Michael Gorin, Allan E. Kreiger, Marc O. Yoshizumi, Anurag Gupta, Tara A. Young,** 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.

Fellowship in Vision Science

Predoctoral and postdoctoral research fellowships in vision science are offered to individuals who have an interest in specific research areas being pursued by Institute faculty. Predoctoral fellowships in neurobiology, neurosciences, pharmacology, chemistry, biochemistry, molecular biology, molecular genetics, cell biology, biomechanics, and visual physiology provide the means for graduate students to obtain their doctorates while working with Institute faculty in highly specialized laboratory environments.

Postdoctoral research fellowships are offered for one to three years in all of the vision science laboratories at the Institute. Each fellowship is unique, and conducted according to mutual agreements between trainees and their mentors. Research areas for postdoctoral fellowships 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.

Vision Science Training Grant

In addition to individually supported research fellowships, a special integrated program is offered under the auspices of a National Eye Institute Vision Science Training Grant for predoctoral and postdoctoral fellows. The grant provides trainees with coordinated and organized exposure to a wide range of techniques and current knowledge in the vision sciences. All fellows are required to take a defined program of core courses and become rapidly acquainted with the fundamentals of vision research within a broad spectrum of the basic sciences.

The training gives each fellow the broadest possible background in ophthalmology and the basic sciences, and enables him/her to pursue individual interests with clearly designed experiments. Fellows are required to present their research at informal and formal seminars and encouraged to participate in the publication of scientific papers. To gain a broad background in the vision sciences, fellows utilize the expertise of several laboratories and collaborate with fellows and faculty members other than their own preceptors.

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 international 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.

Ophthalmic Assistant Training Program

A nine-month program leading to certification as a COA (Certified Ophthalmic Assistant) was instituted in 1978. This extensive educational program, with instruction provided by a number of Institute faculty and staff, is conducted for nonphysicians who want to participate in the care of ophthalmic patients. The program includes lectures, laboratory work, supervised practical experience, and home study. Ophthalmic assistants are trained to perform selected diagnostic tests and assist ophthalmologists in the examination and evaluation of their patients. **Ms. Bobbi Ballenberg, COMT**, is the Program Director and **Dr. Kevin M. Miller** is the Medical Director.

Annual Report 2006-2007

Jules Stein Eye Institute

Appendices

VOLUNTEER AND CONSULTING FACULTYVOLUNTEER 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
Samuel Masket, MD
Albert T. Milauskas, 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. Sinsky, MD
Sherwin H. Sloan, MD
Roger W. Sorenson, MD
Howard H. Stone, MD

**Associate Clinical Professor of
Ophthalmology**

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
Paul B. Donzis, 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
Jonathan I. Macy, MD
Robert K. Maloney, MD
M. Gene Matzkin, MD
Joan E. McFarland, MD
James W. McKinzie, MD
Alan L. Norton, MD
Leon G. Partamian, 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
James F. Sharp, MD
Albert Sheffer, MD
James D. Shuler, MD
Yossi Sidikaro, MD, PhD
Matthew Sloan, MD
Ronald J. Smith, MD
Alfred Solish, MD, MS
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
Reginald G. Ariyasu, MD, PhD
Arthur A. Astorino, MD
Mark A. Baskin, MD
Arthur Benjamin, MD
Katherine L. Bergwerk, MD
Betsy E. Blechman, MD
Cynthia A. Boxrud, MD
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
Robert E. Engstrom, Jr., 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
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
Brian L. Lee, MD
Steven Leibowitz, 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
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



(Left to right) Drs. Harvey Brown, Teresa Rosales, Eduardo Besser, JoAnn Giaconi, Sherwin Isenberg, Daniel Krivoy, and Teddy Tong at an appreciation dinner held to honor the contributions of volunteer clinical faculty

John D. Slaney, MD
 Robert J. Smyth-Medina, MD
 Kenneth O. Sparks, MD
 Kenneth D. Steinsapir, MD
 William C. Stivelman, 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
 Nancy S. Wang, 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

John D. Bartlett, MD
 J. Kevin Belville, MD
 Eduardo Besser, MD
 Amarpreet S. Brar, MD
 Maria Braun, MD
 Neil D. Brouman, MD
 Stephen S. Bylsma, MD
 Joseph H. Chang, MD
 John J. Darin, MD
 Uday Devgan, MD
 Paul J. Dougherty, MD
 Daniel Ebroom, MD

Brad S. Elkins, MD
 JoAnn Giaconi, MD
 Satvinder Gujral, MD
 Matthew L. Hecht, MD
 Lawrence M. Hopp, MD, MS
 John A. Hovanesian, MD
 Aarchan Joshi, MD
 Anisha J. Judge, MD
 Rajesh Khanna, MD
 Daniel Krivoy, MD
 Jeffrey M. Lehmer, MD
 Robert T. Lin, MD
 Laurie C. McCall, MD
 David Paikal, MD
 Alpa A.S. Patel, MD
 Jayantkumar Patel, MD
 Susan Ransome, MD
 Steven H. Rauchman, MD
 Kayar Shah, MD
 Mark Silverberg, MD
 Sharon N. Spooner-Dailey, MD
 Sadiqa Stelzner, MD
 Dana P. Tannenbaum, MD
 William L. Trotter, MD
 Mathew Wang, 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
 Vicente Honrubia, MD, DMSc
 Professor Emeritus of Surgery,
 Division of Head and Neck Surgery;
 Director, Victor Goodhill Ear Center
 Sherman M. Mellinkoff, MD
 Professor Emeritus of Medicine;
 Former Dean, UCLA School of
 Medicine
 C. Kumar Patel, PhD
 Professor, Department of Physics
 and Astronomy
 Leonard H. Rome, PhD
 Senior Associate Dean for Research;
 Professor of Biological Chemistry
 Peter C. Whybrow, MD
 Judson Braun Professor and
 Executive Chair, Department of
 Psychiatry and Biobehavioral
 Sciences; Director,
 Neuropsychiatric Institute; Physician
 in Chief, Neuropsychiatric Hospital



Dr. Mondino congratulates Dr. Stacy Pineles on receiving the ARVO Young Investigator Travel Award



Dr. Uday Devgan (left) presents Dr. Louis Chang, the Resident Award for Excellence in Ophthalmic Surgery

RESIDENTS AND FELLOWS

RESIDENTS

First-Year Residents, 2006-2009

Allen Chiang, MD
Allen Hu, MD
Ahmad M. Mansury, MD
Pradeep Prasad, MD
Sumit P. Shah, MD
Tanvi M. Shah, MD
Tania Tai, MD

Second-Year Residents, 2005-2008

Lauren A. Eckstein, MD, PhD
F. Jacob Khoubian, MD
Yvonne Ou, MD
Stacy L. Pineles, MD
Lucy Q. Shen, MD
Karen Shih, MD
Marc H. Shomer, MD, PhD

Third-Year Residents, 2004-2007

Louis K. Chang, MD, PhD
Hajir Dadgostar, MD, PhD
David T. Goldenberg, MD
Peter J. Kappel, MD
Patty Lin, MD
Eddy V. Nguyen, MD
Tien-An Y. Shih, MD, PhD

EyeSTAR Trainees

Shaheen P. Karim, MD
Alex Yuan, MD, PhD

CLINICAL FELLOWS

Cornea-External Ocular Disease

Jon P. Page, MD
Yuri S. Oleynikov, MD, PhD

Glaucoma

Jane V. Loman, MD
Duc H. Tran, DO

Orbital and Ophthalmic Plastic Surgery

Ronald Mancini, MD
Tanuj Nakra, MD

Vitreoretinal Diseases and Surgery

Eric S. Lee, MD
Scott C. Oliver, MD
Amish R. Purohit, MD
Peter H. Win, MD

Specialized Clinical Fellow

Julie Forister, OD (Contact Lens)

INTERNATIONAL FELLOWS

Comprehensive Ophthalmology

Mario J. de Andrade, MD, Brasilia, Brazil

Cornea-External Ocular Disease

Nirit Bourla, MD, Beer-Sheva, Israel

Glaucoma

Jaehong Ahn, MD, Seoul, South Korea
 Francesca Bertuzzi, MD, Italy
 Hwan Kim Seok, MD, Seoul, South Korea
 Yasunari Munemasa, MD, Kawasaki, Japan
 Carlos Souza, MD, Sao Paulo, Brazil

Orbital and Ophthalmic Plastic Surgery

Aparna Bhatnagar, MD, Bhopal, Madhya Pradesh, India
 Milind N. Naik, MD, Hyderabad, Andhra Pradesh, India

Pediatric Ophthalmology

Joanne Bolinao, MD, Manila, Philippines
 Noa Ela-Dalman, MD, Tel-Aviv, Israel
 Parnchat Pukrushpan, MD, Bangkok, Thailand

Vitreoretinal Diseases

Dan Bourla, MD, Beer-Sheva, Israel
 J. P. Hubschman, MD, Marseille, France

POSTDOCTORAL RESEARCH FELLOWS

Ben Crane, MD, PhD
 Rajendra Kumar, PhD
 Takao Hashimoto, MD, PhD
 Sambit Kar, PhD
 Riki Kawaguchi, PhD
 Joanna Kaylor, PhD
 Ana Karin Kusnetzow, PhD
 Maria Ortube, MD
 Kun Do Rhee, PhD
 Kiyo Sakagami, PhD
 Robin Seitzman, PhD
 Veena Theendakara, PhD
 Ned Van Eps, PhD
 Vivekneil Yellore, PhD
 Quan Yuan, PhD

PREDOCTORAL RESEARCH FELLOWS

Tammy Beran
 Michael Bridges
 Robert Kent Fanter
 Mark Fleissner
 Yi-Wen "Evan" Hsieh
 Gergana Kodjebacheva
 Carlos Lopez
 Sheryll Mangahas
 John McCoy
 Shawn Morales
 Anita Narasimhan
 Mehrnoosh Saghizadeh
 Dora Toledo Warshaviak
 Zoe Verney
 Jang "Lawrence" Yoo
 Alejandra Young



At the Resident Graduation Ceremony, residents honored Dr. Peter Win (left) and Dr. Tanuj Nakra with the Outstanding Fellow Teacher Award

ENDOWED PROFESSORSHIPS, FELLOWSHIPS, AND OTHER FUNDS

ENDOWED PROFESSORSHIPS

Ahmanson Chair in Ophthalmology

Established in 2005 by The Ahmanson Foundation, this Administrative Chair for the Retina Division will enable the Chief to further the exceptional research, education, and clinical care programs currently in place

Leonard Apt Chair in Pediatric Ophthalmology

Established in 2004 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

This endowed term appointment chair was established by Karen and Frank Dabby in 2007 to support the activities of a distinguished faculty member in the area of orbital disease

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 by Mr. and Mrs. Gerber

Joseph L. Demer, MD, PhD
2000–2004
Sherwin J. Isenberg, MD
2005–Present

Brindell and Milton Gottlieb Chair in Pediatric Ophthalmology

Milton and Brindell Gottlieb established this Administrative Chair for the Division of Pediatric Ophthalmology and Strabismus in 2005, in honor of Dr Arthur L. Rosenbaum, Chief of the Division. Upon Dr. Rosenbaum's retirement from UCLA, the donors have requested that the name of this endowment be changed to Arthur L. Rosenbaum, MD, Chair in Pediatric Ophthalmology.

Dolly Green Chair in Ophthalmology

Established in 1980 by Dorothy (Dolly) Green

Dean Bok, PhD
1984–Present

Karl Kirchgessner Foundation Chair in Vision Science

Established in 2001 as a term chair by a colleague of Dr Jules Stein to promote basic science research initiatives of the Department of Ophthalmology

Debora B. Farber, PhD, DPhhc
2002–Present

Kolokotronis Chair in Ophthalmology

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

Kevin M. Miller, MD
2005–Present

Grace and Walter Lantz Endowed Chair

Established in 1991 as a term chair by Mr and Mrs Lantz

J. Bronwyn Bateman, MD
Grace and Walter Lantz Scholar 1993–1995
Sherwin J. Isenberg, MD
Professor, 1996–2004
Joseph L. Demer, MD, PhD
Professor, 2005

David May II Chair in Ophthalmology

Established in 1998 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

Gary N. Holland, MD
1999–2004
Joseph Caprioli, MD
2005–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

Michael B. Gorin, MD, PhD
2006–Present

Frances and Ray Stark Chair in Ophthalmology

Established in 1992 by the Fran and Ray Stark Foundation

Joseph Caprioli, MD
1997–2004
Anne L. Coleman, MD, PhD
2005–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, 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

Gary N. Holland, MD
2005–Present

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 postdoctoral fellows

Amish Purohit, MD
2005–2007
Peter Win, MD
2005–2007

Leonard Apt Fellowship

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

Steven and Nancy Cooperman Fellowship Fund

To support eye research and education, with emphasis on clinical ophthalmology

Klara Spinks Fleming Fellowship Fund

Established in 1985 for the support of cataract research

Jon P. Page, MD
2006–2007

Frances Howard Goldwyn Fellowship

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

Elsa and Louis Kelton Fellowship

Endowed in 1982 to support postdoctoral research and training

Jane V. Loman, MD
2006–2007

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

To support advanced study and research in ophthalmology and vision science

Ronald Mancini, MD
2006–2007
Duc H. Tran, MD
2006–2007

Abe Meyer Memorial Fellowship Fund

Established in 1969 to support clinical fellows at the Institute

Eric S. Lee, MD
2006–2007
Tanuj Nakra, MD
2005–2007
Scott C. Oliver, MD
2006–2007

Adelaide Stein Miller Research Fellowship

Established in 1977 as a tribute to Dr Jules Stein's sister

Harold and Pauline Price Fellowship

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

Scott C. Oliver, MD
2007–2008

Ann C. Rosenfield Fund

Established in 2000 to support the Division of Orbital and Ophthalmic Surgery's International Fellowship Program

Melind Naik, MD
2006–2007

Dr Jack Rubin Memorial Fellowship

To support postdoctoral fellows

Sanford and Erna Schulhofer Fellowship Fund

To support postdoctoral research and training in vision science

Lee and Mae Sherman Fellowship Fund

Established in 1971 to support postdoctoral fellows

Yuri S. Oleynikov, MD
2006–2007

Jules Stein Research Fellowship

Established in 1982 to honor the memory of Charles Kenneth Feldman

Vernon O. Underwood Family Fellowship Fund

Established in 1993 to support clinical fellows

ENDOWMENTS FOR RESEARCH, EDUCATION, AND PATIENT CARE

The Annenberg Foundation Fund

Established in 2003 for follow-up treatment of patients who have benefited from The Annenberg Foundation's direct-service programs for children and adults

Elsie B. Ballantyne Regents Fund

For educational and patient care projects within the Glaucoma Division

Elsie B. Ballantyne

UCLA Foundation Fund

Established in 1971 for research related to glaucoma

Virginia Burns Oppenheimer Endowment Fund

Established in 1998 with memorial gifts as a tribute to Virginia Burns Oppenheimer. The fund is to be used for interior maintenance projects

Card Family Research Fund

Established in 1998 for vision research with an emphasis on corneal disease

Edward and Hannah Carter Fund

Established in 1990 for continuing medical education

Anthony Eannelli Fund

Established in 1998 with a bequest from the estate of Anthony Eannelli for research into the treatment and cure of macular degeneration

Katherine L. Gardner Research Fund

Established in 1984 for vision research

Emma B. Gillespie Fund

Established in 1968 for the development and enrichment of teaching, research, and patient care programs

Audrey Hayden-Gradle Trust

Established in 1994 with an unrestricted trust

Michael Huffington Ophthalmology Scholarship Fund

Established in 1994 for educational activities within the Retina Division

Stella F. Joseph Fund

Established in 1982 for the cataract research of Bradley R. Straatsma, MD

JSEI Maintenance Fund

For special maintenance of the exterior marble and other unique characteristics of the Jules Stein Eye Institute buildings

Herman King Fund

Established in 1993 with a bequest from Herman King to support age-related cataract research under the direction of Dr Joseph Horwitz

The Karl Kirchgessner Foundation Ophthalmology Endowment Fund

Established in 1984 for promising areas of vision science research

Sara Kolb Memorial Fund

Established in 1984 for research in pediatric ophthalmology

John and Theiline McCone Macular Disease Research Fund

Established in 1989 for macular disease research

Memorial Library Funds

In honor of General and Mrs. H.L. Oppenheimer, Jerome T. Pearlman, and Susan Stein Shiva

Chesley Jack Mills Trust

Established in 1990 for vision research with special emphasis on glaucoma associated with corneal disease and/or uveitis

Patricia Pearl Morrison Research Fund

Established in 1982 for the investigation of retinal structure and disease

Emily G. Plumb Estate and Trust

Established in 2003 to support research for the prevention and cure of blindness

Harold and Pauline Price Retina Research Fund

Established in 2000 by the Louis and Harold Price Foundation for retina research under the direction of Steven D. Schwartz, MD

Herb Ritts, Jr. Memorial Fund

Established in 2004 by Herb's family and friends, to provide monies to support AIDS-related vision care, research, and education

Richard B. Shapiro Vision Fund

Established by Mr. Shapiro's friends and family, and endowed in 2006, this fund will underwrite investigations in uveitis and its complications, such as glaucoma

The Skirball Foundation Fund

Established in 1990 for research, education, and patient care in the Ocular Inflammatory Disease Center

Arthur Spitzer Fund

Established with a gift annuity in 1995 by Arthur Spitzer for unrestricted support

Frances and Ray Stark Glaucoma Research Fund

Established in 2000 to support glaucoma research, under the direction of Dr Joseph Caprioli

Raymond and Ruth Stotter Vision Science Research Fund

Established in 1990 for vision science research

Bradley R. Straatsma Research Fund

Established in 1988 for research related to ophthalmology under the direction of Bradley R. Straatsma, MD

Barbara P. Taylor Fund

For the vision science program

UCLA Center for Eye Epidemiology

Established in 1997 by The Ahmanson Foundation to support research and clinical studies to further knowledge of the development, treatment, and prevention of eye disease

Paul J. Vicari Endowed Cataract Research Fund

Established in 2006 by the Resnick Family Foundation to honor Paul J. Vicari, this resource will support cataract research and educational activities currently under the direction of Kevin M. Miller, MD, Professor of Clinical Ophthalmology at UCLA

Uncle Claude Fund

Established in 1972 for vision care services of needy children and adults through the UCLA Mobile Eye Clinic

Anne H. West Estate Fund

Established in 1987 for medical research in eye diseases and disorders and for related equipment and supplies

Daniel B. Whipple Fund

Established in 1982 for the study of the transplantation of eye tissue

EDUCATIONAL OFFERINGS

OPHTHALMOLOGY AND VISION SCIENCE TRAINING PROGRAMS

Twelfth Annual Vision Science Conference

September 23–25, 2006

Sponsored jointly by the Jules Stein Eye Institute and the National Eye Institute, the Annual Vision Science Conference brings together pre- and postdoctoral research fellows and faculty from the Jules Stein Eye Institute to 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 2005–2006, the following course components were offered:

External Disease and Cornea

September 6–November 15, 2006

Gary N. Holland, MD

Section Chairman

Lens and Cataract

November 29, 2006–January 24, 2007

Kevin M. Miller, MD

Section Chairman

Glaucoma

January 31–March 21, 2007

Joseph Caprioli, MD

Section Chairman

Pathology and Intraocular Tumors

March 28–June 6, 2007

Ben Glasgow, MD

Section Chairman

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 are accompanied by lectures in the Ophthalmology Specialty Service Program, in which all faculty members of the Institute participate on a rotating basis; and the Invited Lecture Series, which features guest speakers from other UCLA Departments, from across the United States, and from abroad. The Clinical 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 within the Institute. In addition, the series frequently includes presentations by eminent visitors to the UCLA campus.

Phacoemulsification Course

March 31, 2007

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.

HIV-Related Eye Disease Study Group

At monthly conferences, Gary N. Holland, MD, and Susan S. Ransome, MD, meet with infectious disease specialists from the UCLA Center for AIDS Research and Education (CARE) to discuss new developments in the management of cytomegalovirus (CMV) retinitis and other issues related to the ophthalmic manifestations of AIDS. Interested clinical and research professionals are invited to the meetings.

Fluorescein Angiography Conference

Arranged by the clinical fellows in vitreoretinal studies, this conference is convened periodically to review current angiograms representing disease entities, unusual abnormalities, and controversial interpretations of angiographic findings. Supervision of the conference is by Steven D. Schwartz, MD, and other members of the Retina Division.

Glaucoma Weekly Conference

This conference is designed to teach residents and fellows a basic understanding of the pathophysiology and clinical care of the glaucomas. Faculty, fellows and residents all participate in case and subject presentations and discussions. The conferences are coordinated by Joseph Caprioli, MD.

Oculoplastic Conference

This conference meets bimonthly and includes full-time and volunteer clinical faculty and visitors from the community

who meet to discuss oculoplastic and orbital cases presented by fellows and residents. The coordinators for the year were John D. McCann, MD, PhD, and 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, Drew University of Medicine and Science, 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; Yadavinder P. Dang, MD, at Drew University; and Joseph L. Demer, MD, PhD, and Arthur L. Rosenbaum, MD, at the Jules Stein Eye Institute.

Neuro-Ophthalmology Conference

This conference meets bimonthly and includes full-time and volunteer clinical faculty and visitors from the community who meet to discuss neuro-ophthalmology cases presented by clinical fellows and residents. The coordinator for the year was Anthony C. Arnold, MD.

CONTINUING EDUCATION PROGRAMS

Graves' Disease International Symposium New Insights for TAO: From Bench to Bedside

November 17–18, 2006

Course Directors

Raymond Douglas, MD, PhD
Robert Alan Goldberg, MD
Terry J. Smith, MD

This JSEI thyroid associated ophthalmopathy (TAO) symposium highlighted advances in the diagnosis, treatment, and pathogenesis of TAO. The program included lectures by internationally recognized experts. Controversies and future investigative directions were addressed in a series of small group sessions with active audience participation. Proposals developed in these sessions will eventually form the Symposium Consensus Statement detailing recent progress and future directions in diagnosis and treatment.

Comprehensive Ophthalmology Review Course

March 2–4, 2007

Course Director

David Sarraf, MD

The Jules Stein Eye Institute and the Doheny Eye Institute teamed up this year to present the first annual Comprehensive Ophthalmology Review Course. The collaborative effort was developed to serve ophthalmology training programs in Southern California. The course program concentrated on the epidemiology, clinical presentation, diagnosis and management of ophthalmological disease.

Cornea/Refractive Surgery Update for Optometrists

March 18, 2007

Course Director

D. Rex Hamilton, MD

This course held for Optometrists in the Research to Prevent Blindness Auditorium was sponsored by the UCLA Laser Refractive Center. The program included lectures on inflammatory and infectious disorders of the cornea, Keratoplasty, contact lens fitting, corneal topography, refractive surgery complications, and topical anti-inflammatory and antibiotic agents.

JSEI Clinical and Research Seminar

May 18–19, 2007

Coordinators:

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

The JSEI Clinical and Research Seminar is geared to physicians and basic scientists. It is an intensive course in which UCLA and guest faculty present current concepts and recent advances in ophthalmology. The curriculum emphasizes practical scientific material and incorporates a detailed syllabus. The Jules Stein Lecture series was initiated in 1970 to be held in conjunction with the Institute's annual seminar. In 2002 the Bradley R. Straatsma and Thomas H. Pettit Lecture series were initiated. The invited lectures commemorate the contributions of Drs Jules Stein, Bradley Straatsma and Thomas Pettit to ophthalmic science at UCLA and throughout the United States. The lectures are the academic highlights of the year.

38th Jules Stein Lecturer

David L. Guyton, MD
Zanvyl Krieger Professor of Pediatric Ophthalmology
The Johns Hopkins University School of Medicine

5th Bradley R. Straatsma Lecturer

Robert E. Marc, PhD
Mary H. Boesche Professor of Ophthalmology
University of Utah School of Medicine

5th Thomas H. Pettit Lecturer

Edward E. Manche, MD
Associate Professor of Ophthalmology
Stanford University School of Medicine

RESEARCH CONTRACTS AND GRANTS

FISCAL YEAR 2006-2007	AWARD YEAR TOTAL	TOTAL AWARD
Vision Science Grants		
Anthony Aldave, MD Identification of Keratoconus Cornea Expressed Genes as Candidates in the Pathogenesis of Keratoconus Discovery Fund for Eye Research Duration: 9/1/06 – 8/31/07	1	\$10,000
Anthony Aldave, MD Cloning/Gene/Posterior Corneal Dystrophy National Eye Institute Duration: 9/30/05 – 8/31/10	\$166,239	\$831,195
Anthony Aldave, MD Identification of the Genetic Basis of Keratoconus Using a Candidate Gene Approach Incorporating Gene Expression and Linkage Analysis Data Stein Oppenheimer Endowment Award Duration: 2/13/07 – 2/12/08	1	\$30,000
Suraj P. Bhat, PhD Gene Expressions in Normal and Cataractous Lens National Eye Institute Duration: 6/01/06 – 5/31/11	\$501,485	\$501,485
Suraj P. Phat, PhD Cloning/Gene/Posterior Corneal Dystrophy National Eye Institute Duration: 9/30/05 – 8/31/10	\$166,239	\$831,195
Suraj P. Bhat, PhD Lew Wasserman Merit Award Research To Prevent Blindness Duration: 1/01/96 – 12/31/06	1	\$50,000
Dean Bok, PhD Paul Kayser International Award in Retina Research Retina Research Foundation Duration: 12/1/06 – 11/30/07	1	\$45,000
Dean Bok, PhD Pathology of Inherited Retinal Degeneration National Eye Institute Duration: 12/1/01 – 11/30/06	\$385,995	\$1,929,977

FISCAL YEAR 2006-2007	AWARD YEAR TOTAL	TOTAL AWARD
<p>Dean Bok, PhD, Coordinator w/ Debora B. Farber, PhD, Allan Kreiger, MD Steven Nusinowitz, PhD, Steven Schwartz, MD Gabriel H. Travis, MD, Xian-Jie Yang, PhD Foundation Fighting Blindness Center Grant Foundation Fighting Blindness Duration: 7/1/05 – 6/30/10</p>		
	\$375,949	\$1,105,878
<p>Anne L. Coleman, MD, PhD Student Sight Savers Program Friends of the Congressional Glaucoma Caucus Foundation Duration: 12/21/04 – 12/21/06</p>	1	\$19,000
<p>Anne L. Coleman, MD, PhD Ocular Hypertension Treatment Study (OHTS) National Eye Institute Duration: 1/1/00 – 12/31/07</p>	\$97,992	\$1,013,444
<p>Anne L. Coleman, MD, PhD Incidence of Late Macular Degeneration in Older Women National Eye Institute Duration: 9/30/06 – 7/31/07</p>	\$399,067	\$3,736,782
<p>Anne L. Coleman, MD, PhD Ocular Hypertension Treatment Study National Eye Institute/Charles R. Drew University Duration: 1/1/04-12/31/06</p>	\$72,170	\$109,001
<p>Joseph L. Demer, MD, PhD Biomechanical Analysis in Strabismus Surgery National Eye Institute Duration: 5/1/06 – 4/30/11</p>	\$515,117	\$1,023,416
<p>Joseph L. Demer, MD, PhD New Tests of Vestibular Function National Institute on Deafness and Communicative Diseases Duration: 7/1/02–6/30/07</p>	\$328,795	\$1,934,345
<p>Joseph L. Demer, MD, PhD Walt and Lilly Disney Award for Amblyopia Research Award Research to Prevent Blindness Duration: 7/1/04 – 6/30/07</p>	1	\$75,000
<p>Joseph L. Demer, MD, PhD Genetic and Anatomic Basis of the Fibrosis Syndrome National Eye Institute/Bostons Childrens Hospital Duration: 8/1/03 – 7/31/06</p>	1	\$37,431
<p>Noa Ela-Dalmon, MD Optic Nerve Blood Flow and Retinal Nerve Fiber Layer Thickness in Patients with Unilateral Amblyopia Blind Children's Center Duration: 7/1/06 – 6/30/07</p>	1	\$15,000

FISCAL YEAR 2006-2007	AWARD YEAR TOTAL	TOTAL AWARD
Raymond Douglas, MD, PhD Immune Activation of Fibroblasts National Eye Institute Duration: 10/1/04 – 9/1/09	\$251,090	\$985,588
Gordon L. Fain, PhD Physiology of Photoreceptors National Eye Institute Duration: 6/1/05 – 5/31/08	\$421,800	\$1,265,401
Debora B. Farber, PhD, DPhhc PDEs in Photoreceptor Metabolism & Disease National Eye Institute Duration: 8/1/99 – 7/31/06	1	\$2,210,039
Debora B. Farber, PhD, DPhhc Molecular Mechanisms in Retinal Degenerations National Eye Institute Duration: 7/1/07 – 6/30/08	\$386,250	\$1,931,250
Debora B. Farber, PhD, DPhhc Transgenic/Molecular Approaches to Ocular Albinism National Eye Institute Collaboration with UCSB, Dr. B Reese Duration: 7/1/03 – 6/30/07	\$273,121	\$1,113,271
Debora B. Farber, PhD, DPhhc Studies in Ocular Albinism Vision of Children Duration: 7/1/05 – 6/30/07	1	\$100,000
JoAnn Giaconi, MD Nutritional Associations w/Glaucoma/African American Women American Glaucoma Society Duration: 4/01/06 – 12/31/07	\$40,000	\$40,000
Ben J. Glasgow, MD Proteins in Molecular Mechanisms of Tear Film Formation National Eye Institute Duration: 6/30/06 – 7/1/11	\$250,000	\$1,250,000
Michael B. Gorin, MD Genetics in Age-Related Maculopathy National Eye Institute Duration: 4/1/07 – 3/31/12	1	\$1,081,417
Michael B. Gorin, MD Linkage and Association Studies for Macular Degeneration American Health Assistance Foundation Duration: 4/1/06 – 3/31/08	\$75,000	\$150,000

FISCAL YEAR 2006-2007	AWARD YEAR TOTAL	TOTAL AWARD
Lynn K. Gordon, MD, PhD James S. Adams Scholar Award Research to Prevent Blindness Duration: 7/1/02 – 6/30/07	1	\$50,000
Lynn K. Gordon, MD, PhD Role of EMP2 in RPE Homeostasis American Health Assistance Foundation Duration: 4/1/04 – 3/31/06	\$50,000	\$100,000
Lynn K. Gordon, MD, PhD EMP2, a Molecular Switch for Function of RPE2 VA Merit Grant Duration: 3/5/05 – 9/30/09	\$150,000	\$600,000
Lynn K. Gordon, MD, PhD Intergovernmental Personnel Agreement (Sergei Mareninov) Veterans Affairs Duration: 11/28/05 – 08/25/07	\$35,460	\$79,179
Lynn K. Gordon, MD, PhD Prevention of Chlamydia Infection Through Blockade of the Host Receptor Protein The Gerald Oppenheimer Family Foundation Duration: 8/1/05 – 7/31/06	\$25,000	\$25,000
Anurag Gupta, MD Dexamethasone Posterior Segment Drug Delivery System Allergan Sales, LLC Duration: 8/16/04 – 1/31/09	\$15,443	\$313,155
Michael O. Hall, PhD Studies of Gas6/Merck Mediated Phagocytosis of OS By RPE Cells National Eye Institute Duration: 9/1/03 – 8/31/06	\$309,000	\$609,798
Gary N. Holland, MD Physician-Scientist Award Research to Prevent Blindness Duration: 1/1/03 – 12/31/06	1	\$55,000
Gary N. Holland, MD Studies of Ocular Complications of AIDS (SOCA) National Eye Institute Duration: 8/1/06 – 7/31/07	\$270,108	\$1,036,237
Gary N. Holland, MD Multicenter Uveitis Steroid Treatment (MUST) Trial National Eye Institute Duration: 5/1/06 – 4/30/07	\$116,525	\$236,195

FISCAL YEAR 2006-2007	AWARD YEAR TOTAL	TOTAL AWARD
Gary N. Holland, MD Factors Related to the Severity of Ocular Toxoplasmosis Centers for Disease Control and Prevention Duration: 6/1/06 – 12/31/07	\$10,000	\$29,000
Joseph Horwitz, PhD Alpha-Crystallin & Cataractogenesis National Eye Institute Duration: 8/1/04 – 7/31/09	\$501,651	\$987,436
Wayne L. Hubbell, PhD Molecular Basis of Membrane Excitation National Eye Institute Duration: 5/1/05 – 4/30/10	\$542,402	\$1,577,901
Wayne L. Hubbell, PhD Core Grant for Vision Research National Eye Institute Duration: 3/1/04 – 2/28/09	\$467,926	\$1,358,501
Sherwin Isenberg, MD RPB Physician-Scientist Award Research To Prevent Blindness Duration: 1/01/06 – 12/31/06	\$55,000	\$55,000
Sherwin Isenberg, MD Conjunctival Tissue Gas Monitoring to Prevent Eye Disease The Gerald Oppenheimer Family Foundation Duration: 8/1/05 – 7/31/06	\$25,000	\$25,000
Ralph D. Levinson, MD Mechanisms of Infl Dis Associated w/ Human Leukocyte Antigen (HLA) MacDonald Family Foundation Duration: 5/1/02 – 6/30/07	\$50,000	\$200,000
Ralph D. Levinson, MD Immunogenetics MacDonald Family Foundation Duration: 5/1/02 – 6/30/08	\$50,000	\$123,000
Bartly J. Mondino, MD Departmental Grant Award Research to Prevent Blindness Duration: 1/1/06 – 12/31/06	\$110,000	\$110,000
Steven Nusinowitz, PhD Kirchgessner Foundation Research Award Kirchgessner Foundation Duration: 12/1/04-6/30/08	1	\$50,000
Steven Nusinowitz, PhD Photoreceptor & Retinal Pigment Epithelium (RPE) The Vision of Children Duration: 4/3/06 – 6/30/08	1	\$25,200

FISCAL YEAR 2006-2007	AWARD YEAR TOTAL	TOTAL AWARD
Steven Nusinowitz, PhD Stein Oppenheimer Award Duration: 4/29/06 – 4/30/07	\$16,449	\$16,449
Arthur L. Rosenbaum, MD Physician-Scientist Award Research to Prevent Blindness Duration: 1/1/04 – 12/31/06	1	\$55,000
Arthur L. Rosenbaum, MD Lateral Rectus Reanimation Following Sixth Nerve Palsy National Eye Institute Duration: 9/1/04 – 8/31/07	\$154,500	\$308,167
Hui Sun, PhD Why Does an Amino Acid Change in a Serum Protein Cause Macular Degeneration? The Gerald Oppenheimer Family Foundation Duration: 8/1/05 – 7/31/06	\$25,000	\$25,000
Gabriel H. Travis, MD Stein Professorship Award Research to Prevent Blindness Duration: 7/1/01 – 6/30/08	1	\$375,000
Gabriel H. Travis, MD Regeneration of Cone Pigments & Treatment of Stargardt's National Eye Institute Duration: 3/1/02 – 2/28/07	\$372,291	\$1,897,707
Gabriel H. Travis, MD Vision Science Training Grant National Eye Institute Duration: 9/30/05 – 9/29/10	\$325,766	\$1,530,316
Gabriel H. Travis, MD Bruce Ford & Anne Smith Bundy Foundation Grant Bruce Ford & Anne Smith Bundy Foundation Duration: 8/16/06 – 8/15/07	\$98,303	\$98,303
Gabriel H. Travis, MD Biochemical & Genetic Analysis of the Visual Cycle National Eye Institute Duration: 9/9/05 – 7/31/10	\$375,061	\$1,138,484
Xian-Jie Yang, PhD Cytokine Signal Transduction in Retinal Development National Eye Institute Duration: 9/30/05 – 7/31/09	\$244,125	\$763,423
Xian-Jie Yang, PhD Kirchgessner Foundation Research Award Duration: 6/1/01 – 5/31/07	1	\$50,000

FISCAL YEAR 2006-2007	AWARD YEAR TOTAL	TOTAL AWARD
Xian-Jie Yang, PhD Dolly Green Scholar Award Research to Prevent Blindness Duration: 7/1/03– 6/30/07	1	\$70,000
Xian-Jie Yang, PhD Development of Lentivirus-based Usher 1B Gene Therapy2 Foundation Fighting Blindness/UC San Diego Duration: 7/1/06 – 6/30/07	\$93,923	\$93,923
Tara Young, MD Stein Oppenheimer Award Duration: 4/29/06 – 4/30/07	\$20,000	\$20,000
Postdoctoral Fellow Grants		
Alex Yuan, MD, PhD Debora B. Farber, PhD (Mentor) Embryonic Stem Cell Microvesicles: A New Approach to RNA Transfer The Vision of Children Duration: 6/1/07 – 5/31/09	\$100,144	\$200,144
Benjamin T. Crane, MD, PhD Joseph L. Demer, MD, PhD (Mentor) Human Vestibular Function in Vertical Canal Planes Duration: 7/1/06-6/30/07	1	\$37,000
Ned Van Eps, PhD Wayne L. Hubbell, PhD (Mentor) Structure of the Rhodopsin/Transduction Complete National Eye Institute Duration: 12/1/04 – 11/30/06	\$48,928	\$96,224
Clinical Trials		
Anthony J. Aldave, MD To Evaluate the Safety and Effectiveness of the Phakic 6 H2 Refractive Anterior Chamber Lens Ophthalmic Innovations International, Inc Duration: 7/3/03 – 7/2/07	1	\$82,212
Anthony J. Aldave, MD A Multicenter Study to Map Genes for Fuchs' Dystrophy Case Western University/NIH Duration: 2/1/06 – 8/31/06	\$5,819	\$5,819
Joseph Caprioli, MD Retrospective, Long Term, Longitudinal Analysis of HRT Image Data in Patients with Ocular Hypertension. Pfizer Duration: 9/5/06 – 11/1/07	\$157,500	\$157,500

FISCAL YEAR 2006-2007	AWARD YEAR TOTAL	TOTAL AWARD
<p>Joseph Caprioli, MD A 48 Month, Multicenter, Randomized, Double Masked, Placebo-Controlled Clinical Study Allergan Pharmaceutical Corp. Duration: 8/31/99 – 7/8/07</p>	\$7,800	\$480,636
<p>Joseph Caprioli, MD Oral Memantine Study Allergan Pharmaceutical Company Duration: 8/31/99 – 7/8/07</p>	1	\$472,836
<p>Anne L. Coleman, MD, PhD Incidence of Late Macular Degeneration in Older Women National Eye Institute Duration: 8/1/02 – 7/31/07</p>	\$401,658	\$3,337,715
<p>Anne L. Coleman, MD, PhD Ocular Hypertension Treatment Study National Eye Institute/ Charles R. Drew Univ Med & Sci Duration: 1/1/00 – 12/31/06</p>	\$109,001	\$915,452
<p>Anne L. Coleman, MD, PhD Analysis of Wet AMD Utilizing CMS Pfizer Duration: 11/8/04 – 11/8/06</p>	1	\$36,750
<p>Anne L. Coleman, MD, PhD 0.3MG/Eye Intravitreal Injection Pfizer/Eyetech Pharmaceuticals, Inc Duration: 11/30/05 – 11/29/07</p>	1	\$279,769
<p>Robert Goldberg, MD A Phase III, Randomized, Placebo-Controlled, Multicenter Double-blind Study of Reloxin Medicis Duration: 1/22/07 – 1/22/09</p>	\$191,000	\$191,000
<p>Christine R. Gonzales, MD Open Label Macugen for the Treatment of Macular Edema Secondary to Branch Retinal Vein Occlusion Palmetto Retina Center Duration: 11/3/06 – 10/2/08</p>	\$32,950	\$41,127
<p>Christine R. Gonzales, MD Open Label, Non-Compated Protocol Eyetech Pharmaceuticals, Inc. Duration: 1/4/05 – 12/31/06</p>	\$12,240	\$15,000

FISCAL YEAR 2006-2007	AWARD YEAR TOTAL	TOTAL AWARD
Christine R. Gonzales, MD Pegaptanib Sodium Study Eyetech Pharmaceuticals, Inc. Duration: 8/16/04 – 1/31/07	\$64,585	\$77,912
Christine R. Gonzales, MD A Prospective, OL MC Trial Evaluating the Safety of 0.3MG/Eye Intravitreal Injection Macugen Eyetech Pharmaceuticals, Inc. Duration: 11/30/05 – 11/29/07	\$248,110	\$279,769
Christine R. Gonzales, MD Intravitreal Injections for Patients with Exudative Age-Related Macular Degeneration EyeTech Pharmaceuticals, Inc. Duration: 10/16/01 – 4/1/08	\$40,677	\$820,642
Christine R. Gonzales, MD Intravitreal Injections for Patients with Exudative AMD EyeTech Pharmaceuticals, Inc. Duration: 2/12/03 – 8/31/06	1	\$371,227
Christine R. Gonzales, MD Pegaptanib Sodium for Patients with AMD EyeTech Pharmaceuticals, Inc. Duration: 6/15/04 – 9/30/06	\$166,710	\$204,220
Christine R. Gonzales, MD Macugen with Sham Photodynamic Therapy Eyetech Pharmaceuticals, Inc. Duration: 7/28/05 – 4/30/08	\$11,238	\$229,129
Christine R. Gonzales, MD A Phase IV, Open Label, Multicenter Trial of Maintenance Intravitreal Injections Eyetech Pharmaceuticals, Inc. Duration: 9/7/06 – 8/31/08	\$141,153	\$141,153
Christine R. Gonzales, MD Pegaptanib Sodium (Macugen) for Macular Edema Eyetech Pharmaceuticals, Inc. Duration: 2/3/06 – 2/2/10	\$254,791	\$254,791
Christine R. Gonzales, MD Combretastin A4 Phosphate for Subfoveal Choroidal Neovascularization Oxigene, Inc. Duration: 11/1/05 – 5/1/07	\$2,205	\$103,112
Anurag Gupta, MD 6 mo Ph 3 3 MC M R SH-C TR ASSESS S&E 700 UG 350 UG Allergan Sales, Inc. Duration: 8/16/04 – 1/31/09	\$15,443	\$313,155

FISCAL YEAR 2006-2007	AWARD YEAR TOTAL	TOTAL AWARD
<p>Anurag Gupta, MD A Ph I, OL dose ESC trial of a single intravitreal injection of sirna-027 Sirna Therapeutics Duration: 4/29/05 – 4/1/08</p>	\$34,394	\$152,948
<p>Anurag Gupta, MD Intravitreal Injections in Patients with Exudative AMD Gen Vec Inc. Duration: 1/31/03 – 12/31/06</p>	1	\$242,948
<p>Anurag Gupta, MD Post Juxtasclear Administration of Anecortave Acetate v. Sham Administration in Patients with Exudative AMD Alcon Research, LTD Duration: 6/11/04 – 5/31/08</p>	\$75,564	\$311,980
<p>Anurag Gupta, MD Dexamethasone Posterior Segment Allergan Pharmaceutical Corp. Duration: 8/25/05 – 12/31/09</p>	\$982,292	\$1,202,734
<p>Anurag Gupta, MD Standard Care v. Corticosteroid (SCORE) Allergan Pharmaceutical Corp. Duration: 8/20/04 – 2/19/09</p>	1	\$7,500
<p>Anurag Gupta, MD Subfoveal Choroidal Neovascularization Sirna Therapeutics Duration: 4/29/05 – 4/1/08</p>	\$34,394	\$152,948
<p>Gary N. Holland, MD Studies of the Ocular Complications of Aids (SOCA) National Eye Institute Duration: 8/1/03 – 7/31/06</p>	\$262,984	\$1,335,200
<p>Gary N. Holland, MD Multicenter Uveitis Steroid Treatment Trial (MUST) National Eye Institute Duration: 5/1/06 – 4/30/07</p>	\$119,670	\$119,670
<p>Simon K. Law, MD, PharmD An Evaluation of the Incidence of Glaucoma Risk Factors in Patients from a Managed Care Setting Southern California Permanente Medical Group Duration: 10/1/05 – 7/31/07</p>	\$53,000	\$53,000
<p>Ralph Levinson, MD An 8 Week Phase 3, Multicenter, Masked, Randomized Trial Allergan Pharmaceutical Corp. Duration: 4/1/06 – 12/31/07</p>	\$49,102	\$122,795

FISCAL YEAR 2006-2007	AWARD YEAR TOTAL	TOTAL AWARD
Ralph Levinson, MD A 6 Week, Phase 3, Multicenter, Masked Randomized Trial Allergan Duration: 4/7/06 – 12/31/07	\$71,678	\$71,678
Kevin M. Miller, MD Device Study Ophtec, USA Duration: 7/14/04 – 7/15/06	1	
Kevin M. Miller UV Absorbing Acrylic Posterior Hoya Corporation Duration: 11/1/04 – 10/31/07	\$66,325	\$80,753
Steven D. Schwartz, MD Age Related Eye Disease Study II Emmes Corporation Duration: 1/1/06 – 12/31/07	1	\$38,565
Steven D. Schwartz, MD and Christine R. Gonzales, MD and Anurag Gupta, MD The Diabetic Retinopathy Clinical Research Network National Eye Institute/ JAEB Center for Health Research Duration: 6/1/03 – 12/31/09	1	\$145,465
Steven D. Schwartz, MD A Phase II Multicenter, Randomized, Double Masked, Placebo-Controlled Dose Comparison Study Sirion Therapeutics, Inc. Duration: 4/30/07 – 4/29/10	\$13,299	\$297,698
Steven D. Schwartz, MD A Multicenter, Randomized, Placebo-Controlled, Double-Masked, Parallel Group, Dose Ranging Clinical Trial Chiltern International Duration: 4/1/07 – 3/31/09	\$29,392	\$194,410
Steven D. Schwartz, MD Ranibizumab w/(CNV) Genetech, Inc. Duration: 3/1/06 – 2/28/09	\$17,793	\$227,720
Steven D Schwartz, MD Macular Telangiectasia Lowy Medical Research Institute/NEI Duration: 9/1/05 – 8/31/10	\$175,334	\$185,695

CLINICAL RESEARCH STUDIES

CORNEA AND EXTERNAL EYE

A Study of the Genetic Basis of Posterior Polymorphous Corneal Dystrophy

The Institute is participating in a study funded by the National Eye Institute 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. Principal Investigator: Anthony Aldave, MD

Identifying Novel Genes for Fuchs' Endothelial Corneal Dystrophy

The Institute is participating in a multi-center study funded by the National Eye Institute to identify the gene(s) responsible for Fuchs' corneal endothelial dystrophy, an inherited corneal endothelial disorder that may result in irreversible corneal swelling and loss of vision. Investigators: Anthony Aldave, MD; Bartly Mondino, MD; and Gary Holland, MD

EYE INFECTIONS AND INFLAMMATIONS

Multicenter Uveitis Steroid Treatment

The study compares two currently available treatments for uveitis. Systemic treatment utilizing medications (corticosteroids or immunosuppressive drugs) taken orally, by injection, or by intravenous infusion will be compared to treatment with an intraocular implant containing corticosteroid that is placed surgically. Neither is experimental. Both treatment approaches are known to be effective for treating uveitis, but have different potential adverse events. Investigators: Gary Holland, MD; Ralph Levinson, MD; Susan Ransome, MD; and David Sarraf, MD

Longitudinal Studies of the Ocular Complications of AIDS (LSOCA)

"LSOCA" is a multicenter, NIH-supported epidemiological study designed to investigate the nature of HIV-related eye diseases since the introduction of potent anti-retroviral therapies. Nearly 2,000 people are being followed nation-wide.

Investigators: Gary Holland, MD; and Susan Ransome, MD

Relation Between NK Receptor Genes & CMV Retinitis

Institute faculty are studying why some people with AIDS develop CMV retinitis, an infection of the retina, while others do not. People are at risk for CMV retinitis when the number of circulating CD4+ T-lymphocytes drops substantially and there is a high number of HIV particles in the blood. This study is designed to determine whether genes that control Natural Killer (NK) cell activities differ between HIV-infected individuals who develop CMV retinitis and those who do not, despite similar risk factors otherwise.

Investigators: Gary Holland, MD; and Ralph Levinson, MD

Factors Related to the Severity of Ocular Toxoplasmosis

Toxoplasmosis is a common parasitic disease that can cause a vision-threatening infection of the retina. Severity varies from asymptomatic lesions to extensive destruction of the retina with blindness. 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. Investigators: Gary Holland, MD; and Ralph Levinson, MD

GENERAL OPHTHALMOLOGY

Retinopathy in Adult Patients with Congenital Heart Disease

The purpose of this study is to investigate whether adult patients with congenital heart disease have retinal blood vessel abnormalities. The patients are divided into two groups: (1) patients with coarctatio of the aorta, and (2) patients with cyanotic disease.

This study is being conducted in cooperation with the Adult Congenital Heart Disease Center at UCLA.

Investigators: Steven Schwartz, MD; and Eric Lee, MD

New Tests of Vestibular Function

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

GLAUCOMA AND OPTIC NERVE

Clinical Measurements of the Optic Nerve in Glaucoma

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. Investigators: Joseph Caprioli, MD; Anne Coleman, MD, PhD; and Simon Law, MD, PharmD

Optic Nerve Appearance in Age-Related Macular Degeneration

To evaluate the relationship between macular degeneration and optic nerve

change, digital imaging technology and photography are used to assess the structural appearance of the optic nerve in patients with age-related macular degeneration. Investigator: Simon K. Law, MD, PharmD

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 Coleman, MD, PhD; and Simon Law, MD, PharmD

LENS AND CATARACT

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 (glare, halos, and photophobia) related to the absence of part or all of the human iris. This study is designed to determine the level of reduction in visual disturbances and improvement in uncorrected and best spectacle corrected visual acuity associated with Model 311 lens implantation. The implant is designed for patients who are aniridic and either aphakic or in need of cataract surgery. Investigators: Kevin Miller, MD; and Michael Olson, OD, PhD

Morcher Iris Diaphragm

The Institute has obtained 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, and to evaluate its preliminary effectiveness. The implant is designed to limit the amount of light coming into the eye, like a natural iris, reducing symptoms of light sensitivity and glare. Investigators: Kevin Miller, MD; and Michael Olson, OD, PhD

MACULA, RETINA, AND VITREOUS

Dexamethasone Injections in the Treatment of Diabetic Macular Edema

Retina faculty are participating in a study to assess the safety and efficacy of 70 mg and 350 mg dexamethasone posterior segment drug delivery system in the treatment of patients with diabetic macular edema. The three year multicenter study compares 350 mg and 70 mg dexamethasone injections (slow release) to placebo injections for diabetic macular edema. Investigators: Christine Gonzales, MD; Allan Kreiger, MD; Steven Schwartz, MD; Tara Young, MD, PhD; Eric Lee, MD; Scott Oliver, MD; Robert Coffee, MD; and Shantan Reddy, MD

Clinical Characterization, Genetic Testing, and Visual Function in Patients with Stargardt Disease

This is a natural history study of Stargardt disease. No treatment is currently available. The Institute is identifying and characterizing Stargardt patients and documenting their disease state using a broad range of clinical and functional tests. A major goal of this study is to find better ways to measure progression of the condition for future clinical trials that will test new therapies. Investigators will also look for the variations in the genes that are responsible for causing Stargardt disease and related conditions. Subjects are given the option of having their information entered into a database to be contacted should a treatment become available. Investigators: Debora Farber, PhD, DPhhc; Steven Nusinowitz, PhD; Steven Schwartz, MD; Maria Carolina Ortube, MD; Michael Gorin, MD, PhD

Early Age-Related Macular Degeneration Lesion Study

Retina faculty are undertaking a prospective, open-label, multicenter trial evaluating the safety and efficacy of 0.3 mg eye intravitreal injection of pegaptanib sodium (Macugen) given every six weeks for 54 weeks in

patients with exudative age-related macular degeneration. Investigators: Christine Gonzales, MD; Allan Kreiger, MD; Eric Lee, MD; Scott Oliver, MD; and Shantan Reddy, MD

Understanding the Genetics of Inherited Eye Disorders

The Institute is participating in a study to search for the gene(s) that are responsible for inherited disorders that are either specific to the eye or that 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. Study investigators also examine variants in modifier genes (genes that modify the expression of a second gene) that may affect the severity or progression of these conditions.

Ocular conditions that affect the development and initial function of the eye and visual system, as well as those that lead to later degenerative changes that compromise vision or the health of the eyes are included in these studies. Investigators: Anthony Aldave, MD; Michael Gorin, MD, PhD; and Edwin Stone, MD, PhD

Evaluating the Use of Microplasmin Before Undergoing Vitrectomy Surgery

Retina faculty are evaluating whether the injection of Microplasmin, an experimental drug, will induce a total Posterior Vitreous Detachment (PVD) – loosening the connection between the vitreous (the jelly-like substance in the center of the eye) and the retina (the part of the eye responsible for vision). Microplasmin injected into animal eyes has been shown to help loosen the connection between the vitreous and the retina, called a detachment. Detachment of the vitreous from the retina may improve certain retinal conditions, such as diabetic retinopathy or diabetic macular edema. Investigators: Christine Gonzales, MD; Allan Kreiger, MD; Steven Schwartz,

MD; Tara Young, MD, PhD; Eric Lee, MD; Scott Oliver, MD; and Jean Pierre Hubschman, MD

OCULAR MELANOMA

Molecular and Cytogenetic Studies of Ocular Melanoma

The goal of this research is to study ocular melanoma tumor tissue, and identify key molecular and genetic features that could help predict those patients who may be at high risk for metastasis. A sample of tumor tissue will be removed at the time of radioactive plaque placement surgery or tumor resection and used for molecular and genetic testing. Patients will be informed of the results and, depending on the outcome, will have increased monitoring to detect metastasis at the earliest possible stage and the opportunity to participate in clinical trials of experimental treatments that might not normally be offered to patients with ocular melanoma. Investigators: Ben Glasgow, MD; Lynn Gordon, MD, PhD; Bradley Straatsma, MD, JD; and Tara Young, MD, PhD

PET/CT Imaging for Early Detection of Ocular Melanoma

Subjects with ocular melanoma undergo a series of combined position emission tomography (PET)/CT scans. Results are studied to evaluate the use of this new imaging procedure compared to CT scanning alone. This information may be useful in detecting metastasis (spread of tumors) at an early stage. The research 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: Bradley Straatsma, MD, JD; and Tara Young, MD, PhD

Optical Coherence Tomography of Regional Abnormalities Associated with Choroidal Nevus, Choroidal Melanoma and Choroidal Melanoma Treated with Iodine-125 Brachytherapy

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 of this study 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: Melissa Chun, OD; Jennie Kageyama, OD; Bradley Straatsma, MD, JD; Tara Young, MD, PhD; and Scott Oliver, MD

ORBITAL AND OPHTHALMIC PLASTIC SURGERY

Hydrogel Lacrimal Stent Study

Faculty in the Orbital and Ophthalmic Plastic Surgery Division are evaluating the use of the Hydrogel Lacrimal Stent in dacryocystorhinostomy (DCR) surgery. DCR surgery creates an ostium or drainage hole between the tear duct and the nose, bypassing obstructed tear ducts. A stent is inserted following surgery to maintain the ostium. The new lacrimal stent made of Hydrogel, a medical plastic that can absorb more than 90% of its weight in water, absorbs fluid from surrounding tissue to expand to a diameter of approximately 1/5 inch in a spherical fashion. This fluid-absorbing property allows the stent to be inserted small and expand after insertion, thus minimizing scarring within the nasal cavity. Investigators: Robert Goldberg, MD; and Raymond Douglas, MD, PhD

Thyroid-Related Orbitopathy

In this research, cells from the orbital tissue of patients with Graves' disease, removed as part of surgery, are harvested and grown in the laboratory. Molecular biologic features of the

disease identified in these cells are correlated with clinical parameters of the disease. It is hoped that this research will lead to better therapies and more specific tests to determine the effectiveness of therapies. Investigators: Robert Goldberg, MD; Terry Smith, MD; and Raymond Douglas, MD, PhD

PEDIATRICS AND STRABISMUS

Biomechanical Analysis in Strabismus Surgery

Now in its second decade of support from the National Eye Institute, 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 (MRI) of the extraocular muscles, are performed in the Institute's Clinical and Basic Science Ocular Motility Laboratory before and after strabismus surgery. Selected patients undergo molecular genetic studies of the extraocular muscles and orbital connective tissues. Results are correlated with state-of-the-art anatomic studies done in the laboratory and with comparative anatomic studies in volunteers who do not have strabismus. Principal Investigator: Joseph Demer, MD, 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. A collaborative investigation is being conducted with investigators from Children's Hospital in Boston. Nerve versus muscular causes of this syndrome are being studied in individual families around the country and linked through molecular genetics testing of blood samples to the causal genes. Principal Investigator: Joseph Demer, MD, PhD

PUBLICATIONS OF THE FULL-TIME FACULTY

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