

# Jules Stein Eye Institute

Annual Report 2010–2011





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

## Jules Stein Eye Institute Annual Report 2010–2011

### DIRECTOR

Bartly J. Mondino, MD

### FACULTY ADVISOR

Debora B. Farber, PhD, DPhhc

### MANAGING EDITOR

Sara V. Nguyen

### EDITORS

Nazbanoo Pahlavi  
Lauren I. Tomlinson  
Tina-Marie Gauthier

### GUEST WRITERS

David Barrad  
Dan Gordon  
Cynthia Lee

### PHOTOGRAPHY

Reed Hutchinson PhotoGraphics  
J. Charles Martin  
ASUCLA Photography

### DESIGN

Robin Weisz/Graphic Design

### PRINTING

Marina Graphic Center

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This report covers the period  
July 1, 2010, through June 30, 2011.

Requests for additional copies  
of the publication

Jules Stein Eye Institute  
Annual Report 2010–2011  
may be sent to:

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

View the Annual Report online at:  
[jsei.org/annual\\_report.htm](http://jsei.org/annual_report.htm)

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Printed on recycled paper using soy-based inks

The artist renderings of the Edie and Lew Wasserman Building and Stein Plaza  
were produced by Shimahara Illustration/Richard Meier & Partners Architects.

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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 an MD degree from Rush Medical College. After completing postgraduate studies at the University of Vienna and Chicago's Cook County Hospital, he began medical practice and was certified by the American Board of Ophthalmology.

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

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

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

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



## Doris Stein

Doris Stein's purposeful, yet richly varied life earned the respect and affection of the many people who benefited from her humanitarianism. Inspiring partner of her husband for more than half a century, Doris Stein shared with him the accomplishments

of his philanthropic endeavors and guided his interests in ophthalmology, beginning with a visit to the New York Lighthouse for the Blind in the late 1950s. Deeply moved, Doris Stein urged her husband to "do something!" From that passionate beginning came a broad base of programs that catalyzed eye research.

Doris Stein was a major force in this vision renaissance. She served as an officer and director of Research to Prevent Blindness, personally leading the appeal to establish more resources for investigations into eye diseases. She suggested that Jules Stein assume the principal role in the creation of an eye institute at UCLA, and her unflagging enthusiasm nurtured the Institute's development as a unique provider of every facet of vision research and patient care. Serving as Trustee, she focused special attention on Institute initiatives to combat blindness throughout the world. She devoted her last days, until her death in 1984, to the development of an expansion and companion building for eye research. In 1989, dedication ceremonies were held for the Doris Stein Eye Research Center.

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

## Board of Trustees

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

### Current Members

#### **Bartly J. Mondino, MD**

Director  
Jules Stein Eye Institute  
1994–present



#### **Nelson C. Rising, Esq.**

President and  
Chief Executive Officer  
Maguire Properties  
2004–present



#### **Ronald L. Olson, Esq.**

Partner  
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1995–present



#### **George A. Smith, Esq.**

Consultant  
1992–present



#### **Gerald H. Oppenheimer**

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Gerald Oppenheimer  
Family Foundation  
President  
Systems Design Associates  
1992–present



#### **Katrina Vanden Heuvel**

Publisher and Editor  
The Nation Magazine  
1984–present



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



#### **Casey Wasserman**

President and  
Chief Executive Officer  
The Wasserman Foundation  
1998–present



## Executive Committee

Director, Jules Stein Eye Institute  
Chairman, UCLA Department of Ophthalmology

**Bartly J. Mondino, MD**

Associate Directors, Jules Stein Eye Institute

**Wayne L. Hubbell, PhD**

**Gabriel H. Travis, MD**

Vice-Chairs, UCLA Department of Ophthalmology

**Sherwin J. Isenberg, MD**

**Anne L. Coleman, MD, PhD**

Chief Administrative Officer, Jules Stein Eye Institute

**Jonathan D. Smith**



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

## IN MEMORIAM

### Edie Wasserman

She was called “the first lady of Hollywood,” having played a key part in her husband Lew Wasserman’s ascendance to chief executive at Music Corporation of America (MCA)—now Universal Studios, Inc. With her husband, she was also a leading philanthropist, whose charity included a half-century of generous support for the Jules Stein Eye Institute. **Edie Wasserman** died August 18 at the age of 95, even as the latest chapter in the legacy of her family’s support for the Institute, the state-of-the-art Edie and Lew Wasserman Building, was under construction.

“Edie Wasserman’s support of the Jules Stein Eye Institute is immeasurable,” said Institute Director **Bartly J. Mondino, MD**. “From the establishment of the Wasserman Chair to the current construction of the building which will bear her name, her influence will be felt for generations to come.”

Born Edith Beckerman on November 4, 1915, in Cleveland, Edie met **Lew Wasserman** in the heart of the Depression. Not long after their marriage in 1936, Mr. Wasserman was hired as an agent by ophthalmologist **Jules Stein**, founder of MCA. Lew Wasserman rose to the head of MCA and Universal Studios, which became the world’s most successful entertainment enterprise. He and Edie were married nearly 66 years at the time of his death in 2002.

The close relationship with Jules Stein contributed to the Wassermans’ long devotion to blindness prevention and vision research. Lew Wasserman became an esteemed Institute trustee and succeeded his mentor as chairman of Research to Prevent Blindness, an organization created by Dr. Stein that has contributed more than \$286 million in eye research grant support since its founding in 1960.

The Edie and Lew Wasserman Building, now under construction, was named to honor the Wassermans’ lifelong commitment to blindness prevention. The six-story, 100,000-square-foot facility, which includes three dedicated floors for the Edie and Lew Wasserman Eye Research Center, will provide patients with holistic treatment and services while offering the entire medical community a world-class medical and research center.

Even at age 95, Edie Wasserman was on hand for the ceremonial groundbreaking, putting shovel to dirt at the latest demonstration of her family’s commitment to eradicating blindness through support for the Jules Stein Eye Institute.



Edie at the Wasserman Building Groundbreaking Ceremony, October 2010

In addition to supporting the Institute, Edie and Lew Wasserman were major benefactors and fundraisers for numerous other Los Angeles institutions, including the Motion Picture and Television Fund, which cares for aging actors and others in the industry; the Music Center; CalArts; and Cedars-Sinai Medical Center. They also funded scholarship programs at UCLA and other campuses, mindful that they had been unable to afford college during the Depression.

“Edie represented the best in our nation through her philanthropic support of the Jules Stein Eye Institute, the Motion Picture and Television Fund, and scholarships for students at UCLA,” said Institute Founding Director **Bradley R. Straatsma, MD, JD**.

“She was an incredible woman, sort of once in a lifetime,” said grandson **Casey Wasserman**, in a statement to the *Los Angeles Times*. “She had very strong convictions and was dogged in her pursuit of those. And they usually involved helping others.” Casey Wasserman runs the Wasserman Foundation, established by his grandparents in 1952, as well as the sports and entertainment agency Wasserman Media Group.

“Edie was certainly loved by all her many friends and those she touched with her generous spirit,” adds **Gerald Oppenheimer**, who served on the Institute’s Board of Trustees with Lew Wasserman. “She was a unique and extraordinary woman who accomplished great things during her long life—the world is a better place because of her.”



# Highlights

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Dear Friends,

I am pleased to share these highlights of the 2010–2011 academic year, which continued to strengthen our commitment to preserve sight and prevent blindness. This year was an especially eventful one for the Jules Stein Eye Institute. We witnessed the groundbreaking and initial construction of the **Edie & Lew Wasserman Building**, which marks a major milestone in the growth and progress of the Institute. We are also now bringing our world-class care to the neighborhoods of Santa Monica, through the opening of the **Jules Stein Eye Center, Santa Monica**.

We welcomed two new faculty members, **Stacy L. Pineles, MD**, and **Federico G. Velez, MD**, whose care and expertise will contribute greatly to the activities of the Pediatric Ophthalmology and Strabismus Division, and congratulated **Joseph L. Demer, MD, PhD**, and **Kevin M. Miller, MD**, on their appointments as Chief of the Pediatric Ophthalmology and Strabismus Division and Chief of the Comprehensive Ophthalmology Division, respectively.

During the year, faculty members received special honors from a number of professional organizations, including the Laureate Recognition Award from the American Academy of Ophthalmology. Important research grants were awarded and renewed by the National Eye Institute, the Foundation Fighting Blindness, and other funding organizations.

Among exceptional philanthropic gifts to the Jules Stein Eye Institute were a gift from **Diane and Robert Bigelow** in support of the Orbital and Ophthalmic Plastic Surgery Division, and contributions from **David and Randi Fett** and **Theo and Wendy Kolokotronis** to enable improvements to the Institute's website. Moreover, significant bequests were received, including one from the Estate of **Mrs. Sidney F. Brody**.

As we anticipate the exciting changes ahead for the Jules Stein Eye Institute, we have not forgotten the exceptional donors and friends who have contributed to our achievements. The late **Edie Wasserman** is a prominent example of one such individual. As the building in her name is being constructed, it is our privilege to honor her legacy, and that of countless donors who have contributed to our accomplishments, by ensuring that the Institute maintains its standing as one of the world's preeminent eye research centers that is available to all who need its services.

Sincerely,

A handwritten signature in white ink that reads "Bartly J. Mondino". The signature is fluid and cursive.

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

# Events

The 2010–2011 academic year brought significant, exciting changes to the Jules Stein Eye Institute. Of chief note was the groundbreaking of the Edie and Lew Wasserman Building, a project decades in the making, which brought with it the promise of enormous growth for the Institute. The opening of the Jules Stein Eye Center in Santa Monica was another significant event, providing Santa Monica residents with greater accessibility to the exceptional care for which the Institute is known.

## The Edie and Lew Wasserman Building: A Vision Realized

In October 2010, construction began on the Edie and Lew Wasserman Building, a major new research and patient-care facility at UCLA. Named to honor the late **Edie Wasserman** and her husband, the late **Lew Wasserman**, the new facility is designed to meet the Jules Stein Eye Institute's growing needs, further ensuring the Institute's development into the leading eye research and treatment center of the 21st century.

Designed by Richard Meier & Partners Architects—the same architectural firm that created the Getty Center—the six-story, 100,000-square-foot building will provide three dedicated floors for the Edie and Lew Wasserman Eye Research Center. The Center will include operating rooms as well as expanded refractive, oculoplastic, and cataract services. Each practice area will offer procedure space and clinics, which will allow patient exams, testing, and surgery to all be conducted in one locale.

## A Shared Vision

The welcome addition of the Edie and Lew Wasserman Building in Stein Plaza is a symbolic culmination of a relationship formed more than 80 years ago between Lew Wasserman and Jules Stein, and is a testament to their shared mission of eradicating preventable blindness.

The initial vision of the Institute has its roots in the 1960s, when Lew Wasserman, **Jules Stein**, and then-**UCLA Chancellor Franklin Murphy** imagined a trio of facilities dedicated to restoring and preserving eyesight. The Jules Stein Eye Institute—the first of the three buildings in Stein Plaza—opened its doors in 1966, led by Founding Director **Bradley R. Straatsma, MD**. In the years that followed, burgeoning programs rapidly filled the Institute's once-ample space and, in 1989, Stein Plaza expanded with the creation of the Doris Stein Eye Research Center.



Wasserman building dedication, October 14, 2010. Left to right: Dr. Neil Martin, chair of the UCLA Department of Neurosurgery; Dr. Bartly Mondino, director of the Jules Stein Eye Institute and chair of the UCLA Department of Ophthalmology; Casey Wasserman, CEO of the Wasserman Foundation; the late Edie Wasserman, grandmother of Casey Wasserman and wife of Lew Wasserman; Dr. Gene Block, UCLA Chancellor; Michael Palladino, lead architect principal-in-charge, Richard Meier & Partners Architects; Dr. Eugene Washington, vice chancellor of the UCLA Health Sciences and dean of the David Geffen School of Medicine at UCLA; Dr. Arie Beldegrun, director of the Institute of Urologic Oncology

The Institute began seeking more ways to increase its capacity in the late 1990s. Institute Director **Bartly J. Mondino, MD**, notes that the push to construct a new facility found a crucial ally in **Casey Wasserman**, President and Chief Executive Officer of the Wasserman Foundation. “Casey Wasserman spearheaded efforts to construct a facility in honor of his grandparents and has been a driving force in the development, planning, and execution process of the Edie and Lew Wasserman Building,” explained Dr. Mondino.

The Wasserman facility completes Stein Plaza’s triumvirate of buildings and will be located opposite the Doris Stein Eye Research Center and adjacent to the Jules Stein Eye Institute, at the Westwood Village gateway to UCLA’s southern campus. Official construction of the new building is expected to continue through October 2012. After tenant improvements for the various departments, the Edie and Lew Wasserman Eye Research Center is scheduled to open officially in March 2014.



Wasserman Building construction site, November 22, 2010



Wasserman Building construction site, October 14, 2011

## Jules Stein Eye Center Debuts in Santa Monica

The Jules Stein Eye Institute has begun offering its world-renowned comprehensive and subspecialty eye care at a new location in Santa Monica. The Jules Stein Eye Center, Santa Monica offers nearly all the evaluation, diagnosis, testing and treatment services that are available at the Jules Stein Eye Institute in Westwood, while providing greater convenience to patients in Santa Monica and surrounding communities.

### Spectrum of Care

The new Jules Stein Eye Center, Santa Monica offers both routine vision care services and specialty care. With few exceptions, the same ophthalmological services available at the Institute in Westwood are offered at the new center—and mostly by the same providers. Institute experts in retinal disorders, corneal disorders, glaucoma, neuro-ophthalmology and laser refractive surgery provide the same outstanding care that has made the Jules Stein Eye Institute one of the top eye care centers in the world.

The new center includes its own testing facilities and offers a wide range of examinations including visual field, corneal map (corneal topography), intraocular lens measurement, retinal imaging—including fluorescein angiography—and others. The new center also offers the convenience of an on-site optical shop and plenty of parking.

## World-Class Care with Neighborhood Convenience

“UCLA's Jules Stein Eye Center provides Santa Monica residents with the premier services of the Jules Stein Eye Institute, which offers one of the top programs of eye care in the country,” explains Bartly Mondino, MD, director of the Jules Stein Eye Institute. “We're bringing this high level of care to the neighborhoods of Santa Monica.”

The new center is conveniently located just off Wilshire Boulevard and features six exam rooms (soon to be expanded to eight), well-equipped testing facilities and an optical shop in 2,800 square feet. There is on-site parking for easy access.

With subspecialists from the Jules Stein Eye Institute also seeing patients in the new Santa Monica location, the Jules Stein Eye Center will be able to care for most of patients' vision care needs. “The new center will take care of 90 to 95 percent of our patients' needs in Santa Monica. For surgeries, and for some seldom-needed tests requiring specialized laboratories, patients would be referred to our main facility in Westwood,” states Dr. Mondino.

## Participating Physicians

Colin A. McCannel, MD  
Medical Director,  
Jules Stein Eye Center  
Surgery and Disease of the Retina,  
Macula and Vitreous

Gavin G. Bahadur, MD  
Comprehensive Ophthalmology

Laura Bonelli, MD  
Neuro-Ophthalmology,  
Comprehensive Ophthalmology

Jenny J. Chon, OD  
Optometry

D. Rex Hamilton, MD  
Cataract and Refractive Surgery

Catherine Hwang, MD  
Orbital and Ophthalmic  
Plastic Surgery

Batool Jafri, MD  
Cornea, Comprehensive  
Ophthalmology

Philip Kwok, OD  
Optometry

Kouros Nouri-Mahdavi, MD  
Glaucoma

### Contact Information

Jules Stein Eye Center  
1807 Wilshire Boulevard  
Suite 203  
Santa Monica, CA 90403  
Phone: (310) 829-0160  
Fax: (310) 829-0170  
Email: [jsec\\_sm@jsei.ucla.edu](mailto:jsec_sm@jsei.ucla.edu)

# Honors

Each year, as part of their ongoing academic pursuits, faculty members achieve notable recognition for their accomplishments and contributions. They give prestigious lectures around the world, participate in influential professional and community organizations, and serve as writers and editors for a wide range of scientific journals. In some cases, special honors are bestowed. This year, members of the faculty were honored for their contributions to ophthalmology and were assigned leadership positions in professional organizations. Division chiefs were appointed, and awards were received in support of research.

## New Division Chiefs

The Jules Stein Eye Institute announced the appointment of **Joseph L. Demer, MD, PhD**, Leonard Apt Professor of Ophthalmology and Professor of Neurology, as Pediatric Ophthalmology and Strabismus Division Chief and **Kevin M. Miller, MD**, Kolokotronis Professor of Clinical Ophthalmology, as Comprehensive Ophthalmology Division Chief. Both positions became effective July 1, 2010.

Dr. Demer joined the Institute in 1988 as Comprehensive Ophthalmology Division Chief—a position he held until his recent appointment. He also directs the Ocular Motility Clinical Laboratory, and chairs the EyeSTAR Training Program (Specialty Training and Advanced Research in Ophthalmology and Visual Science). Dr. Demer's clinical practice focuses on pediatric and adult strabismus, nystagmus, advanced magnetic



Dr. Joseph Demer  
Chief, Pediatric Ophthalmology and Strabismus



Dr. Kevin Miller  
Chief, Comprehensive Ophthalmology

resonance imaging of the eye socket and cranial nerves, and children's eye diseases. He has a longstanding research interest in the role of the brain and extraocular muscles in the control of eye movements and visual perception. He received the prestigious Friedenwald Award from the Association for Research in Vision and Ophthalmology and an Alcon Research Achievement Award for his work on the extraocular muscles and orbital connective tissues.

Dr. Miller, the new Comprehensive Ophthalmology Division Chief, joined the faculty in 1991 after completing his residency training in ophthalmology at the Jules Stein Eye Institute. He is the recipient of the Paul Vicari Endowed Cataract Research Fund at UCLA and a Senior Honor Award from the American Academy of Ophthalmology. Dr. Miller's clinical practice focuses on cataract and refractive surgery and the rehabilitation of eyes with complex anterior segment problems. His research interests are in the areas of refractive cataract surgery, intraocular lenses, ophthalmic optics, and surgical outcomes. He works with industry to bring products, instruments, and lenses to market. He has his own humanitarian device exemption from the US Food and Drug Administration to implant Morcher artificial iris segments in eyes with congenital or acquired iris defects.

## American Academy of Ophthalmology Laureate Recognition Award

The American Academy of Ophthalmology (AAO) presented its highest honor, the 2010 Laureate Recognition Award, to **Bradley R. Straatsma, MD, JD**, Professor of Ophthalmology Emeritus and Founding Director of the Jules Stein Eye Institute, for his distinguished career and exceptional contributions to ophthalmology. Widely acclaimed as a pioneer in the study



Dr. Bradley Straatsma, recipient of AAO's 2010 Laureate Recognition Award



of peripheral retinal disease, investigations of tumors, and research on ophthalmic conditions such as diabetic retinopathy and cataract, he received the award on October 17, 2010, during AAO's annual meeting in Chicago. Among Dr. Straatsma's many accomplishments is his service in leadership positions in nearly all the major ophthalmology academic and educational entities, including the American Academy of Ophthalmology and Otolaryngology, the American Board of Ophthalmology, the Pan-American Association of Ophthalmology, the American Ophthalmological Society and the Academia Ophthalmologica Internationalis. "In recognition for his commitment to teaching and education, and for his professional leadership on many fronts, we acknowledge the debt we all owe to him for his remarkable achievements," said **Randy Johnston, MD**, president of AAO. "Dr. Straatsma is truly recognized worldwide as a

leader in ophthalmic research, clinical care, and education. Few individuals have had such a great impact on the field of ophthalmology, with his record of accomplishment, commitment, and integrity."

## Prevent Blindness America Investigator Award

Prevent Blindness America honored **Sophie X. Deng, MD, PhD**, Assistant Professor of Ophthalmology, with a 2010 Investigator Award for her project, "Diagnosis and Staging of Limbal Stem Cell Deficiency (LSCD) Using In Vivo Laser Scanning Confocal Microscopy." The award was announced on August 3, 2010. Dr. Deng's study seeks to create a sensitive and accurate test to detect the early signs and classify the severity of LSCD, which causes loss of vision and functional blindness without early diagnosis and treatment.

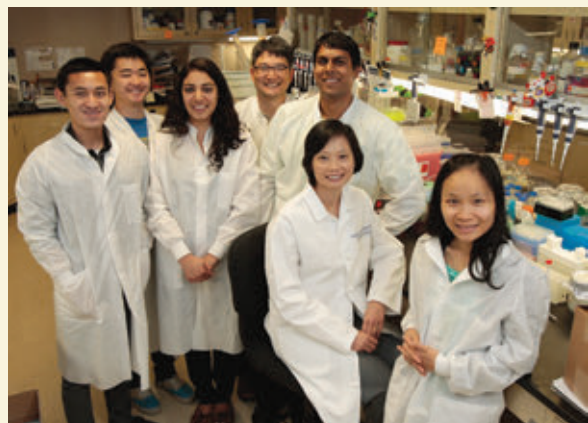
## New Vice-Chair, Jules Stein Eye Institute Executive Committee

**Anne L. Coleman, MD, PhD**, has been appointed as one of two vice-chairs on the Jules Stein Eye Institute Executive Committee. In this position, Dr. Coleman is succeeding the late **Arthur L. Rosenbaum, MD**, former Chief of the Pediatric Ophthalmology and



Dr. Anne Coleman

Strabismus Division. The Institute's Executive Committee advises the Director of the Jules Stein Eye Institute on matters involving research, education and patient care.



Dr. Sophie Deng, seated, with members of her laboratory

## MAPS Award

The American Glaucoma Society announced that **JoAnn A. Giaconi, MD**, Assistant Clinical Professor of Ophthalmology, was the recipient of the 2010 Mentoring for Advancement of Physician Scientist (MAPS) Award, on August 17, 2010. The \$10,000 grant award is given to clinicians at early stages of their academic careers to facilitate their glaucoma research interests.



Dr. JoAnn Giaconi

## Alex Irvine Award

**Allan E. Kreiger, MD**, Professor of Ophthalmology, received the Alex Irvine Award at the Western Retina Study Club meeting, March 18–19, 2011, in Los Angeles, California. Dr. Kreiger is the Founding Director of the Jules Stein Eye Institute's Retina Division. He has a long-standing interest and involvement in the field of vitreoretinal surgery. The award is named



Dr. Allan Kreiger



for **Alex Irvine, MD**, Professor Emeritus of Ophthalmology at the University of California, San Francisco, who is considered one of the most influential retinal specialists in the country.

### Alumnus of the Year

**Barry A. Weissman, OD, PhD**, was named Alumnus of the Year at the University of California, Berkeley, School of Optometry graduation on May 21, 2011. Dr. Weissman received his OD, MS and PhD in Physiological Optics from the UC Berkeley School of Optometry. He joined UCLA in 1979 and is currently a Professor of Ophthalmology and Director of the Contact Lens Service at the Jules Stein Eye Institute.



From left, Dr. Barry Weissman, Dennis Levi, OD, PhD, Dean of the UC Berkeley School of Optometry, and Page Yarwood, OD, President of the California Optometry Association



From left, Dr. Gary Small, director of the Longevity Center, with honorees Collins, Fonda and Dr. Straatsma

### Distinguished Scholar in Science & Medicine Award

On June 4, 2011, **Bradley R. Straatsma, MD, JD**, Founding Director and Professor of Ophthalmology Emeritus at the Jules Stein Eye Institute, received the Distinguished Scholar in Science & Medicine Award at the UCLA Longevity Center's 2011 ICON Awards gala. Others honored that evening were Academy Award-winning actress Jane Fonda, recipient of the 2011 ICON Award, and Jim Collins, UCLA philanthropist and former CEO of Sizzler International, who was presented with the Art Linkletter Lifetime Achievement Award.

The **UCLA Longevity Center** is dedicated to enhancing and extending productive and healthy lives through research and education. The ICON awards recognize individuals who have made outstanding contributions to society throughout their lives. The event was hosted by Tony Award-winning actor Jason Alexander. Institute Director Bartly Mondino, MD, presented Dr. Straatsma with the award. **Gail and Gerald Oppenheimer** graciously sponsored a table at the event, and attended along with various Institute faculty members.

### Community Impact Award

The **Edie and Lew Wasserman Building**, currently under construction in Stein Plaza, won a Community Impact Award at the Los Angeles Business Council's Los Angeles Architectural Awards ceremony on June 30, 2011. This prestigious award recognized the project's breadth of investment, the anticipated advancements resulting from its completion, and its architectural excellence and significance. The Wasserman facility, which will house the Edie and Lew Wasserman Eye Research Center, is scheduled to be completed in March 2014. It was designed by Richard Meier & Partners Architects, the same architectural firm that created the Getty Center.

## President of Los Angeles County Medical Association

**Troy Elander, MD**, Assistant Clinical Professor of Ophthalmology, was installed as the Los Angeles County Medical Association's 140th president at a reception and dinner on June 30, 2011. Institute faculty and fellows were on hand to congratulate Dr. Elander. As a member of the volunteer clinical faculty, Dr. Elander's efforts in training future generations of ophthalmologists serves an important function in upholding the educational goals of the Institute.



From left, Diane Elander and Drs. Ralph Levinson, Troy Elander and Anne Coleman at the reception honoring Dr. Elander's installation as president of the Los Angeles County Medical Association

## Association for Research in Vision and Ophthalmology Fellow

The Association for Research in Vision and Ophthalmology inducted **Steven D. Schwartz, MD**, Ahmanson Professor of Ophthalmology and Chief of the Retina Division, into its 2011 class of distinguished Fellows as a Silver Fellow. Utilizing a point system for awarding a gold or silver level of fellowship, this prestigious honor recognizes members for their accomplishments, leadership, and contributions to the association.

## American Academy of Ophthalmology Awards

UCLA ophthalmology faculty were honored by the American Academy of Ophthalmology for their outstanding contributions to the Academy, its scientific and educational programs, and to the field of ophthalmology. The awards were announced at the Academy's annual meeting in Chicago in October 2010.

*Life Achievement Honor Award:*

**Kenneth J. Hoffer, MD**

*Achievement Award:*

**JoAnn Giaconi, MD**

**D. Rex Hamilton, MD, FACS**

## Institute Rankings and Recognition

The Jules Stein Eye Institute ranked as one of the top five American ophthalmology centers and the best in the Western United States for the 21st consecutive year. The ***U.S. News & World Report*** survey, which reviewed reputation rankings from board-certified specialists from across the country, was published in August 2010.



Additionally, ophthalmology chairmen and resident directors once again ranked the Jules Stein Eye Institute as one of the best ophthalmology departments in the country. In ***Ophthalmology Times'*** 15th annual survey, published on October 1, 2010, the Institute ranked fourth in the Best Overall Program and Best Research Program categories. Additionally, the Institute's commitment to exceptional patient care was reflected in its movement from the fifth to the fourth position in the category of Best Clinical (Patient Care) Program.

# Research

Research is a key component of the Institute's mission, and a high priority for faculty who often devote their life's work to furthering our knowledge of specific vision processes and eye diseases. Major research grants are routinely awarded each year to support this effort. In 2010–2011, faculty members received important awards from both public and private organizations. New grants and grant renewals will enable faculty to further ongoing vision science investigations that have shown promise, and to undertake clinical trials that have direct application to some of the country's most common ophthalmic problems.

## Legally Blind Patients Receive Stem Cell Transplants

Testing the power of regenerative medicine to treat eye diseases, on July 12, 2011, surgeons at the Jules Stein Eye Institute successfully transplanted highly specialized cells derived from human embryonic stem cells into the eyes of two patients.

Both patients, one with Stargardt's macular dystrophy and the other with dry age-related macular degeneration, underwent outpatient transplantation surgeries and recovered uneventfully, according to the lead surgeon, **Steven D. Schwartz, MD**, Ahmanson Professor of Ophthalmology and Chief of the Retina Division at the Jules Stein Eye Institute. Dr. Schwartz is the principal investigator on two clinical trials, one for each

eye disease; each trial will include 12 patients, who are legally blind, and will determine the safety of stem cell therapy as well as the patients' ability to tolerate the treatment. "Early indications are that the patients tolerated the surgical procedures well," said Dr. Schwartz in a statement.

Advanced Cell Technology, Inc. (ACT), a leader in the field of regenerative medicine, has been working for the last decade on developing a stem cell therapy to treat eye diseases. Human embryonic stem cells can differentiate into any cell type. The stem cell-derived retinal pigment epithelial (RPE) cells that were transplanted during surgery were differentiated in ACT labs. Each patient received a relatively low dose of the transplanted RPE cells (50,000) into the subretinal space of the treated eye.

The dosing of the first patients in these trials, which are being closely watched by scientists and stem cell therapy advocates around the world, was hailed by company officials as an important milestone in the therapeutic use of stem cells and may pave the way for a new therapeutic approach to treating eye diseases.

Currently, both eye diseases are untreatable. The dry form of macular degeneration, the most common form of the disease, is the leading cause of blindness in the developed world, especially among people over the age of 55. As many as 30 million people in the United States and Europe suffer from this disease. But the number of people affected is expected to double over the next 20 years as the population ages. Stargardt's causes progressive vision loss, usually starting when patients are between 10 to 20 years of age.

In both conditions, the layer of RPE cells located beneath the retina deteriorates and atrophies. These cells support, protect and provide nutrition for light-sensitive photoreceptors in the eye. Over time, the death of the RPE cells and eventual loss of the photoreceptors can lead to blindness as central vision is gradually destroyed. Doctors are hoping the transplanted RPE cells will implant and begin functioning.

"Today—13 years after the discovery of human embryonic stem cells—the great promise of these cells is finally being put to the test," said **Robert Lanza, MD**, chief scientific officer of ACT, who attended both procedures at the Institute. "The initiation of these two clinical trials marks an important turning point for the field....It's time to start moving these exciting new stem cell therapies out of the laboratory and into the clinic."

*This is an edited version of an article that first appeared in UCLA Today.*



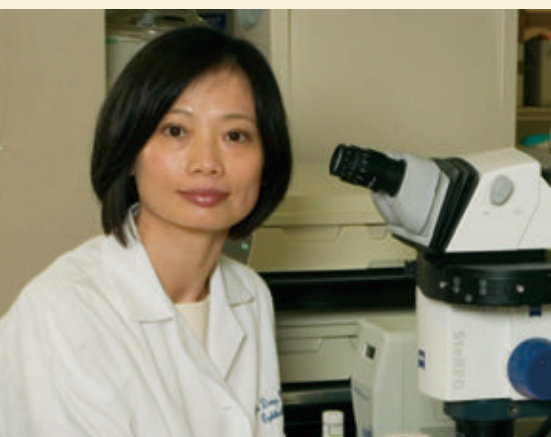
Dr. Steven Schwartz peers into a microscope during surgery to transplant highly specialized cells derived from human embryonic stem cells into the eyes of the first patients enrolled in two clinical trials that are testing the promise of stem cell therapy.

## CIRM Grant for Translational Research

### Sophie X. Deng, MD, PhD,

Assistant Professor of Ophthalmology, has received a grant from the California Institute for Regenerative Medicine (CIRM) for translational research. Over 3.2 million people worldwide are bilaterally blind due to corneal diseases. Limbal stem cell deficiency (LSCD) has been recognized as a major cause, either primary or secondary, of significant visual loss and blindness in many common corneal disorders.

A healthy, transparent ocular surface is made up of a non-keratinized, stratified squamous epithelium that is highly differentiated. The corneal epithelium is constantly renewed and maintained by the corneal epithelial stem cells, or limbal stem cells (LSCs). When the LSCs are deficient and unable to repopulate the corneal surface, the cornea surface will become opaque. A corneal transplant cannot survive and is contraindicated for LSCD. LSC transplantation, in the form of keratolimbal allografts to restore a transparent corneal surface, has thus been the main therapy in the United States. The 5-year survival rate of these allografts is about 30%, largely due to immune rejection.



Dr. Sophie Deng is establishing new techniques for engineering limbal stem cells used in the treatment of corneal diseases.

Transplantation of autologous limbal epithelial stem cells that have been expanded on tissue culture has successfully restored vision and revolutionized patient specific stem-cell based therapy, as recently reported by an Italian LSC transplant team. They have achieved a 68% success rate during a mean follow-up time of three years. The expansion process requires mouse 3T3 feeder cells to grow a sufficient amount of stem cells for transplantation. To reduce cross-contamination from animal products, LSCs that are expanded in a xenobiotic-free culture system have been developed; however, the 3-year survival rate of these cells after transplantation is 50% and only 30% survive at 5 years, suggestive of inefficient expansion without the mouse feeders. Therefore, new cell engineering methods that can efficiently expand and regenerate autologous LSCs in a xenobiotic-free system are greatly needed to achieve acceptable clinical outcomes and offer stem-cell based therapy to patients with this devastating blinding disease.

The first goal of this proposed translational research is to establish a xenobiotic-free culture system by replacing the mouse feeder cells with a human feeder system to supply a sufficient amount of LSCs for transplantation. Expansion efficiency will then be further optimized by modulating the Wnt and Notch signaling pathways based on Dr. Deng's laboratory findings that Wnt and Notch signaling regulate the proliferation and differentiation of corneal epithelial cells. The ability and safety of these regenerated human corneal epithelial stem cells to reconstruct the ocular surface will be tested in an LSCD animal model. The results of this proposed study will pave the way for preclinical development of this novel cell engineering technique.



Dr. David Sarraf is studying the effects of ranibizumab on submacular vascularized pigment epithelial detachment.

## Evaluating Ranibizumab for the Treatment of Submacular Vascularized Pigment Epithelial Detachment

In collaboration with the Southern California Desert Retina Consultants and sponsored by Genentech, **David Sarraf, MD**, Associate Clinical Professor of Ophthalmology, is working on a project to evaluate the efficacy and safety of treating subfoveal pigment epithelial detachment associated with choroidal neovascularization with ranibizumab, an anti-vascular endothelial growth factor fragment. This multicenter, randomized, prospective, open-label study is following 32 patients for a total period of 12 months. Submacular vascularized pigment epithelial detachment (PED) is a common development in age-related macular degeneration (AMD) among the elderly. Past studies using the drug ranibizumab have shown excellent efficacy and safety profiles for treating predominantly classic, predominantly occult, and 100% occult choroidal neovascularization associated with AMD. However, the effects of ranibizumab on vascularized PED have not been thoroughly investigated. The purpose of this study is to determine if ranibizumab will improve vision in patients with submacular vascularized PED.

## Consensus Conference on JIA-Associated Uveitis

On April 8–9, 2011, 25 experts from the fields of pediatric rheumatology, pediatric ophthalmology, and uveitis met in a consensus conference at the Jules Stein Eye Institute to formulate recommendations regarding the evaluation and treatment of uveitis in children with juvenile idiopathic arthritis (JIA). The meeting also included several patients and their parents, who were able to provide their own perspectives on treatment issues. The meeting was organized by **Gary N. Holland, MD**, Jack H. Skirball Professor of Ocular Inflammatory Diseases, who is an authority on JIA-associated uveitis, and was supported by a generous grant from the Arthritis Foundation—Southern California Chapter.

Uveitis, which refers to inflammation inside the eye, is a well-recognized and potentially devastating complication of JIA. Many aspects of JIA-associated uveitis remain poorly understood, and experts in the field have noted that approaches to treatment of children with JIA-associated uveitis vary markedly in the community, based on a clinician's training and level of experience. The goal of the meeting was to draw upon the experience and expertise of specialists who see large numbers of patients, and disseminate their recommendations for a more uniform approach to treatment through various professional societies, including the Children's Arthritis and Rheumatology Research Alliance (CARRA), the Pediatric Eye Disease Investigators Group (PEDIG), the American Association for Pediatric Ophthalmology and Strabismus (AAPOS), and the American Uveitis Society (AUS).

In preparation for the meeting, detailed questionnaires dealing with treatment practices were developed and circulated to members of the CARRA network, PEDIG, AAPOS, and AUS. Responses, which were received prior to the conference from 318 specialists, helped to identify areas of controversy regarding treatment for discussion at the conference. Conference participants are currently working on a "white paper" that will describe the group's recommendations and data from the questionnaires.



Dr. Gary Holland with longtime patient Nicholas Bianchine, who shared his experiences growing up with uveitis at a consensus conference organized by Dr. Holland.



Dr. Stacy Pineles is studying the effectiveness of occlusion treatment for intermittent exotropia, the most common form of childhood-onset exotropia, which causes the eyes to sporadically turn outward.

### Occlusion Treatment for Intermittent Exotropia

As part of the Pediatric Eye Disease Investigators Group (PEDIG), **Stacy L. Pineles, MD**, Assistant Professor of Ophthalmology, is investigating intermittent exotropia (IXT), a misalignment of the eyes. In IXT, the eyes turn outward some of the time and are straight at other times. It is the most common form of childhood-onset exotropia, with an incidence of 32.1 per 100,000 in children under 19 years of age. Many cases of IXT are treated using non-surgical interventions including eye patching, eyeglasses, and therapy activities designed to help the eyes work together. The rationale for such interventions is that they may improve the ability to control the IXT, and may delay or eliminate the need for surgical correction. Although non-surgical treatments for IXT are commonly prescribed, such treatments have not been subjected to rigorous study and their efficacy in improving visual function or eliminating negative social concerns remains unclear. Although occlusion treatment, or patching of the eye, is widely used, there have been no randomized clinical trials evaluating its effectiveness. The present study is being conducted to fulfill this need.

# 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 welcomed two new full-time faculty members, honored faculty at the Annual Clinical and Research Seminar, and hosted a course to educate both new and seasoned physicians on clinical research methods.

## New Faculty

This year, we welcomed the appointment of two full-time faculty members to the Jules Stein Eye Institute's Pediatric Ophthalmology and Strabismus Division.

**Stacy L. Pineles, MD**, was appointed Assistant Professor of Ophthalmology, effective August 1, 2010. Dr. Pineles received her medical degree from the



Dr. Stacy Pineles

University of Pennsylvania. She completed a residency in ophthalmology at the Jules Stein Eye Institute, followed by a fellowship in pediatric ophthalmology and strabismus. She then completed a fellowship in neuro-ophthalmology at the Scheie Eye Institute of the University of Pennsylvania and The Children's Hospital of Philadelphia. The recipient of

numerous awards in recognition of outstanding performance throughout her medical and ophthalmology training, she received the prestigious Heed Fellowship in 2008. As a full-time faculty member in pediatric ophthalmology and strabismus, Dr. Pineles participates in the division's patient care, teaching, and research activities. Given her dual training in pediatric ophthalmology and neuro-ophthalmology, Dr. Pineles has a special clinical interest in pediatric neuro-ophthalmic diseases, as well as adult patients with neurologic causes of strabismus. Her research interests include evaluating the surgical outcomes of strabismus surgery in children and adults and studying pediatric optic nerve diseases.

**Federico G. Velez, MD**, was appointed Assistant Clinical Professor of Ophthalmology, effective July 1, 2010. Dr. Velez received his medical degree and completed a residency in ophthalmology in Colombia, South America. He came to the Jules Stein Eye Institute for fellowship training in pediatric ophthalmology and strabismus. After completing a three-year fellowship in 2001, he joined the clinical staff at the Institute and at Olive View-UCLA Medical Center. During the past nine years, Dr. Velez has provided pediatric ophthalmology and strabismus services in University Ophthalmology Associates and in the clinical practice of the late Arthur



Dr. Federico Velez

L. Rosenbaum, MD, former Chief of the Pediatric Ophthalmology and Strabismus Division. In collaboration with Dr. Rosenbaum, he published multiple papers and book chapters and developed new surgical techniques to treat complicated forms of strabismus. Dr. Velez's clinical practice focuses on childhood eye disorders and pediatric and

adult strabismus. His primary research interest is new approaches to strabismus. He is studying the mechanisms of its congenital and acquired forms and is involved in the development of new surgical approaches for the treatment of complicated forms of ocular motor deficiencies.



## Annual Clinical and Research Seminar

The Institute's most prestigious academic event of each year, the Clinical and Research Seminar, was held on June 10, 2011. Sponsored by the Department of Ophthalmology Association, it provided an opportunity for discussion of emerging vision research and a celebration of teaching and faculty volunteerism. This year's seminar featured the 42nd Jules Stein Lecture, the 9th Bradley R. Straatsma Lecture and the 9th Thomas H. Pettit Lecture.

*42nd Jules Stein Lecturer*

**R. Lawrence Tychsen, MD**

Professor of Ophthalmology and Visual Sciences, Pediatrics, Anatomy and Neurobiology  
Washington University  
School of Medicine

*9th Bradley R. Straatsma Lecturer*

**Matthew M. LaVail, PhD**

Professor of Anatomy and Ophthalmology  
Beckman Vision Center  
University of California  
San Francisco School of Medicine

*9th Thomas H. Pettit Lecturer*

**Harry S. Geggel, MD**

Head of Section Ophthalmology  
Director of Cornea and Refractive Surgery  
Virginia Mason Medical Center

A number of volunteer and clinical faculty received awards of distinction. The S. Rodman Irvine Prize, which recognizes excellence among Department of Ophthalmology faculty, was posthumously awarded to **Arthur Rosenbaum, MD**, former Chief of the Pediatric Ophthalmology and Strabismus Division. **Gene Pawlowski, MD**, received the Faculty Teaching Award for his contributions to residency education.



Clinical and Research Seminar Lecturers (from left), Drs. R. Lawrence Tychsen, Matthew LaVail, and Harry Geggel



Sandra Rosenbaum, wife of the late Dr. Arthur Rosenbaum, accepts the S. Rodman Irvine Prize on his behalf from Institute Director Dr. Barty Mondino.



## Introduction to Clinical Research Course

Jules Stein Eye Institute faculty members **Gary N. Holland, MD**, and **Bartly J. Mondino, MD**, organized the course "Introduction to Clinical Research," which was held at UCLA March 4–6, 2011. The course was co-sponsored by the Association of University Professors of Ophthalmology, and endorsed by the Association for Research in Vision and Ophthalmology. It was supported by a grant from the National Eye Institute. Attended by ophthalmology residents, clinical fellows, and faculty from across the nation, the course provided a comprehensive overview of research methods, interpretation of statistical tests, regulatory issues, and manuscript preparation. It was designed to assist new investigators who are beginning their academic careers, and to help physicians read and interpret scientific literature more critically. The course involved instructors from various UCLA departments, as well as guest speakers from other institutions.



The Introduction to Clinical Research Course attracted ophthalmology residents, fellows, and faculty nationwide.



Faculty, fellows, and graduate students at the 16th Annual Vision Science Conference at UCLA's Lake Arrowhead Conference Center

## 16th Annual Vision Science Conference

The 16th Annual Vision Science Conference, co-sponsored by the National Institutes of Health/National Eye Institute Vision Science Training Grant and the Jules Stein Eye Institute, was held on October 8–10, 2010. More than 80 basic scientists and clinical researchers gathered at UCLA's Lake Arrowhead Conference Center to participate in scientific discussions and memorable networking events. This year's conference theme was "INSPIRE," with guest speakers **Mr. Brian Bushway**, from the World Access for the Blind, **B.S. Manjunath, PhD**, from UC Santa Barbara, **Ms. Diane Kierce**, from the UCLA Department of Philosophy, and **Steven Barnes, PhD**, visiting researcher at UCLA and Professor of Physiology & Biophysics and Ophthalmology at Dalhousie University, Halifax, Nova Scotia, giving key presentations. Vision science fellows **Carlos Lopez** and **Michael Bridges, PhD**, won awards for best poster and best oral presentation, respectively.

## Aesthetic Eyelid and Facial Rejuvenation Course

The Orbital and Oculoplastic Surgery Division held its “Aesthetic Eyelid and Facial Rejuvenation” course on July 15–16, 2011 at the Jules Stein Eye Institute. The event attracted ophthalmologists, dermatologists and cosmetic surgeons from around the world. The two-day event combined surgical demonstrations, a cadaver dissection, and didactic lectures that informed participants of the latest advances in the field of aesthetic and reconstructive surgery for the eyelids and face.

**Cynthia Boxrud, MD**, Assistant Clinical Professor of Ophthalmology, gave this year’s Robert Axelrod, MD, Memorial Lecture, “The Science and Applications of Adipocyte Derived Stem Cells.” Dr. Boxrud is an alumnus of the ophthalmic plastic and reconstructive surgery fellowship at the Jules Stein Eye Institute.



Gene Pawlowski, MD, recipient of the Faculty Teaching Award, is congratulated by graduating residents.

## New Directorship of Ophthalmic Education Program for Medical Students

On January 1, 2011, **Gary N. Holland, MD**, Jack H. Skirball Professor of Ocular Inflammatory Diseases, and **JoAnn A. Giaconi, MD**, Assistant Clinical Professor of Ophthalmology, assumed the co-directorship of the UCLA ophthalmic education program for medical students. Their activities include organizing the lectures and workshops for the first- and second-year medical students, as well as the third-year required ophthalmology week within the surgical clerkship.

# Philanthropy

“Do everything as in the eye of another.”  
—Lucius Annaeus Seneca

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

Contributions both large and small, from individuals, corporations, and foundations, provide faculty with the resources necessary to consistently record noteworthy achievements in ophthalmic research, education and patient care. This fiscal year, 567 donors supported sight-saving endeavors at the Institute. Additionally, it received ten bequests from the estates of Mrs. Sidney Brody, Edward Dominik, and Anne Benjamin, among others, and numerous contributions made in honor of friends and family.

## Gift in Support of Graves' Disease Research

**Diane and Robert Bigelow**, longtime friends of the Jules Stein Eye Institute, made a \$100,000 gift in support of the Orbital and Ophthalmic Plastic Surgery Division, under the direction of **Robert A. Goldberg, MD**, Karen and Frank Dabby Professor of Ophthalmology. Mr. Bigelow is the founder of Budget Suites of America, a popular hotel chain in the Southwest, and Bigelow Aerospace, a purveyor of spaceflight resources for national space agencies and corporate clients. The Bigelows are active philanthropists in their hometown of Las Vegas, where they support the Nevada Cancer Institute and programs at the University of Nevada, Las Vegas.

The gift to the Orbital and Ophthalmic Plastic Surgery Division will support scientific innovations in the treatment of Graves' disease, a thyroid eye condition that can result in double vision, severe corneal and optic nerve damage, and blindness. Graves' disease often affects young patients and seriously impairs their quality of life.

The Bigelows first grew interested in donating to the Institute when learning about the activities of the Division through a meeting with Dr. Goldberg. “When Mrs. Bigelow gets involved in philanthropy, she does not just contribute financially, but also with her personal passion and leadership skills as well,” said Dr. Goldberg.

The goal of the Division's program is to develop more effective, less invasive treatment options for patients suffering from this and other orbital disorders. The Jules Stein Eye Institute is dedicated to leading the efforts in national and international Graves' disease research.



Robert and Diane Bigelow

## The Louis & Harold Price Foundation Contributes to Macular Telangiectasia Research

The Louis & Harold Price Foundation made a \$250,000 donation to macular telangiectasia (MacTel) research, conducted under the direction of **Steven D. Schwartz, MD**, Ahmanson Professor of Ophthalmology and Chief of the Retina Division. This gift completes a \$1 million pledge.

MacTel is a rare disease of the retina characterized by abnormalities of the tiny blood vessels around the fovea (center) of the macula (highly pigmented yellow spot near the center of the retina). Currently, there is no standard approach in its management. Dr. Schwartz and his team of investigators are conducting a multicenter natural history (observational study) to develop better knowledge of as well as a treatment for MacTel.

“We are grateful to The Louis & Harold Price Foundation for its recent contribution in support of the advancement of MacTel research at the Jules Stein Eye Institute. The gift reflects a long history of dedication to our mission of preserving sight and preventing blindness. The Price Macular Telangiectasia Research Fund, under the guidance of Dr. Steven Schwartz, will help us better investigate and ultimately treat this little-understood disease,” said **Bartly J. Mondino, MD**, Director of the Jules Stein Eye Institute.

The Price Foundation has supported the Institute since 1974. In addition to MacTel research, its generosity has created the Harold and Pauline Price Endowed Chair in Ophthalmology, the Retina Research Fund, and the Harold and Pauline Price Fellowship.

## May and Stark Families Honored at Chair Reception

On June 21, 2011, a reception was held at the Jules Stein Eye Institute's Adam Room to honor the families of **David May II** and **Frances and Ray Stark** for their outstanding philanthropic contributions. The event also served to congratulate **Joseph Caprioli, MD**, the David May II Endowed Chair in Ophthalmology, and **Anne L. Coleman, MD, PhD**, the Frances and Ray Stark Foundation Chair in Ophthalmology, on their permanent-chair appointments.

The family of David May II, a founding member of the Jules Stein Eye Institute's Board of Trustees, created the David May II Endowed Chair in Ophthalmology in 1998 as a term chair in his honor. It was then converted to a permanent chair with an additional pledge from **The Wilbur May Foundation**.

The Frances and Ray Stark Foundation Chair in Ophthalmology was established by **The Fran and Ray Stark Foundation** in 1992 as a term chair and designated by longtime Institute supporter Mr. Ray Stark to be used with a preference for glaucoma research. With an additional pledge from the Stark Foundation, the chair was made permanent.

**Bartly J. Mondino, MD**, Jules Stein Eye Institute's Director, presented David Geffen School of Medicine at UCLA chair sculptures, created by The Franklin Mint, to the donors and chair holders.



From left, Tommee May, Dr. Joseph Caprioli, Dee May, Dr. Bartly Mondino, and Arnold Rosenstein commemorate the permanent conversion of the David May II Endowed Chair in Ophthalmology with recognition chair sculptures.



Wendy Stark (left) with Dr. Anne Coleman

## Thomas H. Pettit, MD, Endowed Vision Fund

**James D. Shuler, MD**, was a medical intern at UCLA's Emergency Room when he first met his future mentor, **Thomas H. Pettit, MD**, the first chief of the Cornea-External Ocular Disease Division at the Jules Stein Eye Institute. Dr. Shuler was on call, when a woman with a simple laceration arrived. The patient was Dr. Pettit's daughter. At the time, Dr. Shuler had been selected for the Institute's residency program and, knowing Dr. Pettit's excellent reputation, was nervous about this unusual situation. Dr. Shuler recalls how the legendary ophthalmologist put a young intern at ease, allowing him to close his daughter's wound. "I realized that he was so into teaching and passing what he knew onto others—that meant a lot to me."

The Thomas H. Pettit, MD, Endowed Vision Fund has been established with a lead gift from Dr. Shuler and fellow Institute alumni, **Drs. David B. Cohen, Donald E. Dickerson, John D. Hofbauer, W. Andrew Maxwell, Lee T. Nordan**, and **Randall J. Olson**. The Pettit Fund will support the activities of the Cornea and Uveitis Division and ultimately become an endowed chair through future contributions. Additional gifts were provided by **Robert K. Maloney, MD**, a member of the volunteer faculty, and **L. Lothaire Bluth, MD**, an alumnus of the residency program.



Dr. Thomas H. Pettit

Dr. Shuler encourages others who knew Dr. Pettit to honor his legacy by donating to the fund. "There are very few physicians who really deserve that kind of respect and have an endowed chair named after them, and Dr. Pettit is one of those few physicians."

## In Memoriam Jeanne A. Rappaport

**Mrs. Jeanne A. Rappaport**, a longtime supporter of UCLA's Jules Stein Eye Institute, passed away peacefully on December 6, 2010. A native of Philadelphia, Mrs. Rappaport was a Brentwood resident for 50 years and had a successful career in real estate development in California and Texas.

**Bradley R. Straatsma, MD, JD**, Professor of Ophthalmology Emeritus and Founding Director of the Jules Stein Eye Institute, commented, "With broad cultural and philanthropic interests, Jeanne Rappaport was a highly intelligent, charming, and elegant lady." A supporter of many charities, she was a major contributor to the theater, music, humanities, and sports in the community and at UCLA.

"I am grateful for Mrs. Rappaport's generosity and steadfast belief in the mission of the Institute,"

said Institute Director **Bartly J. Mondino, MD**. "Her foresight in establishing the Frederic G. Rappaport Endowed Fellowship, in memory of her son, will continue to honor her legacy by training future generations of ophthalmologists who excel in the study of retinal abnormalities and tumors of the eye."

"She was an inspiration to me," reflected **Robert A. Goldberg, MD**, Karen and Frank Dabby Professor of Ophthalmology and Chief of the Institute's Orbital and Ophthalmic Plastic Surgery Division. "I always enjoyed her sense of humor, her intelligence, her graciousness, and her perseverance in the face of adversity. In those things, she was a role model for me. I will miss her."

Mrs. Rappaport is predeceased by her son Frederic and two sisters. She is survived by her immediate family of son **Kenneth M. Rappaport** of La Jolla, a nephew and two nieces, and her brother **Leonard Apt, MD**, Professor Emeritus of Ophthalmology and Founding Chief of the Division of Pediatric Ophthalmology at UCLA, who noted, "Jeanne was my best friend and confidante, and her loss is felt every day."

The family has designated the Frederic G. Rappaport Endowed Fellowship Fund for memorial tributes. For more information, please contact the Institute's Development Office at (310) 206-6035.



Mrs. Jeanne Rappaport



## Thank You

The Jules Stein Eye Institute is grateful for the generous and steadfast support of its research, education, patient care, and outreach activities. This investment will influence ophthalmology and related disciplines at UCLA and throughout the broader vision community. Thank you for your commitment to these important endeavors.

### Major Gifts over \$25,000

The Ahmanson Foundation  
The American Glaucoma Society  
amfAR, The Foundation for  
AIDS Research  
Diane and Robert Bigelow  
Mrs. Sidney F. Brody  
Bruce Ford and Anne Smith Bundy  
Foundation  
Estate of Edward Dominik  
Dr. and Mrs. David Fett  
Fight for Sight, Inc.  
The Foundation Fighting Blindness  
Friends of the Congressional  
Glaucoma Caucus Foundation,  
Inc.  
A.P. Giannini Foundation  
Brindell Gottlieb  
Carol and Timothy W. Hannemann  
William & Margaret Fern Holmes  
Family Foundation  
Hope for Vision  
Jules and Doris Stein UCLA  
Support Group  
The Karl Kirchgessner Foundation  
Wendy and Theo Kolokotronis  
Knights Templar Eye Foundation,  
Inc.  
Walter Lantz Foundation  
Macula Vision Research  
Foundation  
Richard Malm  
Ruth and George E. Moss  
Neuro Kinetics, Inc.  
Gerald Oppenheimer Family  
Foundation  
Philip D. Pitchford  
The Louis and Harold Price  
Foundation, Inc.  
Research to Prevent Blindness, Inc.  
Arna Saphier Trust  
Beth and David Shaw  
The Skirball Foundation  
The Fran and Ray Stark Foundation  
St. Luke's Roosevelt Hospital:  
Research Institute for  
Health Sciences

Vision of Children, Sam and  
Vivian Hardage, Co-Founders  
Pat and Joe Yzurdiaga  
Plus numerous anonymous  
contributors

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

### In Honor of...

Joseph Caprioli, MD  
L. Scott Feiler, MD  
Devin Freeman  
Kathryn M. Gardner, MD  
Robert A. Goldberg, MD  
Sarah Goldberg  
Michael B. Gorin, MD, PhD  
Marguerite Hirsch  
John D. Hofbauer, MD  
Kevin M. Miller, MD  
Ernest L. Neu  
Mr. and Mrs. Bill O'Sullivan  
Norman Shorr, MD  
Paul Torres  
Ray Umstead  
Casey Wasserman

### In Memory of...

Simon M. Abdallah  
Elisabeth Benkoe  
Virgil James Brooks  
Sandra Fitzgerald Dolbec  
Edward I. Goodlaw, OD  
Katherine L. Gray  
Sally Y. Hansen  
Pierre Havre  
Anna M. Kunkle  
Kenneth J. Marcus  
Ernest Megazzini  
Pearl Raack  
Jeanne A. Rappaport  
Arthur L. Rosenbaum, MD  
Nancy S. Wang, MD



## Endowed Professorships, Fellowships, and Other Funds

### Endowed Professorships

#### Ahmanson Chair in Ophthalmology

Established in 2005 by The Ahmanson Foundation as an administrative chair for the Retina Division Chief to further research, education, and clinical care programs

Steven D. Schwartz, MD  
2007–Present

#### Leonard Apt Endowed Chair in Pediatric Ophthalmology

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

Joseph L. Demer, MD, PhD  
2005–Present

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

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

Robert A. Goldberg, MD  
2008–Present

#### Charles Kenneth Feldman Chair in Ophthalmology

Established in 1982 in memory of Charles Kenneth Feldman, an entertainment industry executive

Robert D. Yee, MD  
Professor 1984–1987

Hillel Lewis, MD  
Scholar 1989–1993

Gabriel H. Travis, MD  
2001–Present

#### Laraine and David Gerber Chair in Ophthalmology

Established in 1998 as a term chair by Mr. and Mrs. Gerber and converted to a permanent chair in 2007 with an additional pledge

Joseph L. Demer, MD, PhD  
2000–2004

Sherwin J. Isenberg, MD  
2004–Present

#### Brindell and Milton Gottlieb Chair in Pediatric Ophthalmology

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

Arthur L. Rosenbaum, MD  
2008–June 2010

#### Dolly Green Chair of Ophthalmology

Established in 1980 by Dorothy (Dolly) Green

Dean Bok, PhD  
1984–Present

#### Ernest G. Herman Endowed Chair in Ophthalmology

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

#### Karl Kirchgessner Foundation Chair in Vision Science

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

Debora B. Farber, PhD, DPhhc  
2001–Present

#### Kolokotronis Chair in Ophthalmology

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

Kevin M. Miller, MD  
2005–Present

#### Grace and Walter Lantz Endowed Chair in Ophthalmology

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

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

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

Professor 1996–2004

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

#### David May II Endowed Chair in Ophthalmology

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

Gary N. Holland, MD  
1999–2004

Joseph Caprioli, MD  
2004–Present

#### Oppenheimer Brothers Chair in Ophthalmology

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

Joseph Horwitz, PhD  
2003–Present

#### Harold and Pauline Price Chair in Ophthalmology

Established in 2000 by the Louis and Harold Price Foundation and converted to a permanent chair in 2006 with an additional pledge

Michael B. Gorin, MD, PhD  
2006–Present



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

Initiated in 2007 by The Skirball Foundation in honor of Jack H. Skirball's long-standing friendship with Dr. Jules Stein and Lew Wasserman

Gary N. Holland, MD  
2009–Present

**Jerome and Joan Snyder  
Chair in Ophthalmology**

Established in 2007 to support the activities of a distinguished faculty member who directs the Ophthalmology Residency Program, ensuring that UCLA's accredited program continues to offer rigorous and comprehensive instruction for individuals of the highest caliber

Anthony C. Arnold, MD  
2008–Present

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

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

Joseph Caprioli, MD  
1997–2004

Anne L. Coleman, MD, PhD  
2004–Present

**Jules Stein Chair  
in Ophthalmology**

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

Wayne L. Hubbell, PhD  
1983–Present

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

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

Bartly J. Mondino, MD  
2000–Present

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

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

John R. Heckenlively, MD  
1997–2004

Gary N. Holland, MD  
2004–2009

**Edith and Lew Wasserman  
Chair in Ophthalmology**

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

Manfred Spitznas, MD  
1979–1981

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

Ben J. Glasgow, MD  
2003–Present

**Endowed Fellowships**

**Rosalind W. Alcott Fellowship**

Established in 1978 for the training of outstanding postdoctoral fellows

David Isaacs, MD  
2010–2011

**Leonard Apt Endowed  
Fellowship in Pediatric  
Ophthalmology**

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

Jessica Laursen, MD  
2010–2011

**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**

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

Vicki Chan, MD  
2010–2011

**David and Randi Fett  
Fellowship Fund**

Established in 2010 to provide fellowship support for the Division of Orbital and Ophthalmic Plastic Surgery

David Isaacs, MD  
2010–2011

**Klara Spinks Fleming  
Fellowship Fund**

Established in 1985 to support cataract research

Gina Y. Lee, MD  
2010–2011

**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

Jessica Laursen, MD  
2010–2011

**Bert Levy Research  
Fellowship Fund**

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

**David May II Fellowship Fund**

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

Kristina Kurbanyan, MD  
2010–2011

### **John and Theiline McCone Fellowship**

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

Christopher Gee, MD  
Allen Hu, MD  
Pradeep S. Prasad, MD  
Adriana Ramirez, MD  
2010–2011

### **Abe Meyer Memorial Fellowship Fund**

Established in 1969 to support clinical fellows at the Institute

Shu-Hong Holly Chang, MD  
Matthew Swanic, MD  
2010–2011

### **Adelaide Stein Miller Research Fellowship**

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

### **Harold and Pauline Price Fellowship**

Established to support research and education in ophthalmology and vision care

Lev Grunstein, MD  
2010–2011

### **Frederic G. Rappaport Fellowship in Retina/Oncology**

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

### **Ann C. Rosenfield Fund**

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

### **Dr. Jack Rubin Memorial Fellowship**

Established to support post-doctoral fellows

### **Sanford and Erna Schulhofer Fellowship Fund**

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

### **Lee and Mae Sherman Fellowship Fund**

Established in 1971 to support postdoctoral fellows

Lev Grunstein, MD  
2010–2011

### **Jules Stein Research Fellowship**

Established in 1982 to honor the memory of Charles Kenneth Feldman

Luke Deitz, MD  
2010–2011

### **Vernon O. Underwood Family Fellowship Fund**

Established in 1993 to support clinical fellows

Partho S. Kalyani, MD  
2010–2011

### **Endowments and Gifts for Research, Education, and Patient Care**

The Annenberg Foundation Fund

J. Richard Armstrong and Ardis Armstrong Fund

Elsie B. Ballantyne Regents Fund

Elsie B. Ballantyne UCLA Foundation Fund

Virginia Burns Oppenheimer Endowment Fund

Card Family Research Fund

Edward and Hannah Carter Fund

Anthony Eannelli Fund

Katherine L. Gardner Research Fund

Emma B. Gillespie Fund

Audrey Hayden-Gradle Trust

Marie and Jerry Hornstein Family Endowed Macular Degeneration Research Fund

Michael Huffington Ophthalmology Scholarship Fund

Stella F. Joseph Fund

JSEI Maintenance Fund

Herman King Fund

The Karl Kirchgessner Foundation Ophthalmology Endowment Fund

Jerome Comet Klein Fellowship and Lecture Fund

Sara Kolb Memorial Fund

John and Theiline McCone Macular Disease Research Fund

Memorial Library Funds

William, Richard, and Roger Meyer Fund

Chesley Jack Mills Trust

Patricia Pearl Morrison Research Fund

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

Emily G. Plumb Estate and Trust

Harold and Pauline Price Retina Research Fund

Herb Ritts, Jr. Memorial Vision Fund

Arna Saphier Macular Degeneration Fund

Albert Sarnoff Endowed Cataract Fund

Richard B. Shapiro Vision Fund

The Skirball Foundation Fund

Arthur Spitzer Fund

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

Raymond and Ruth Stotter Vision Science Research Fund

Bradley R. Straatsma Research Fund

Barbara P. Taylor Fund

UCLA Center for Eye Epidemiology

Paul J. Vicari Endowed Cataract Research Fund

Uncle Claude Fund

Anne H. West Estate Fund

Daniel B. Whipple Fund

Pat and Joe Yzurdiaga Endowed Cataract Fund

# Community Outreach

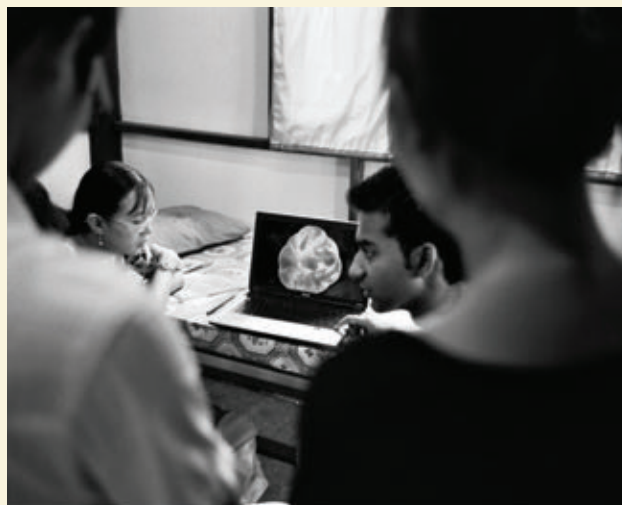
Much of the Jules Stein Eye Institute's reputation springs from its innovative vision research, which translates into first-class patient care, including care for those in underserved communities. Members of the Institute's family—Jules Stein Eye Institute Affiliates volunteers, donors, staff, faculty,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

## Jules Stein Eye Institute Fellow Assists Doctors Without Borders in Myanmar

In late February 2011, Jules Stein Eye Institute uveitis fellow **Partho Kalyani, MD**, spent two weeks at a clinic in rural Myanmar (Burma), assisting in the training of eight Burmese AIDS clinicians. The focus of the training was the diagnosis and treatment of patients with cytomegalovirus (CMV) retinitis, a potentially blinding eye infection common in patients with AIDS. The trip was sponsored by the Holland branch of **Médecins Sans Frontières** (MSF)/Doctors Without Borders and was arranged by **David Heiden, MD**, a uveitis specialist in the Department of Ophthalmology at California Pacific Medical Center, San Francisco, in his role as Medical Director for **Seva Foundation's** AIDS Eye Initiative. Dr. Kalyani was sponsored by his fellowship advisor, **Gary Holland, MD**, Jack H. Skirball Professor of Ocular Inflammatory Diseases and Chief of the Institute's Cornea and Uveitis Division.

The American doctors were assisted in the training by **Ni Ni Tun, MD**, a Burmese AIDS clinician who oversees the clinic. The Burmese clinicians were taught how to examine the retina, how to distinguish diseased versus normal retinas, and how to administer intravitreal ganciclovir injections to patients with active infection. Training was incremental, with the Burmese clinicians first observing the American doctors, then eventually examining and injecting patients on their own by the last day of their training.

CMV retinitis is a retinal infection that affects people with impaired immune systems, such as AIDS patients. If left untreated, in a relatively short amount of time it can lead to the death of retinal cells, retinal detachment and eventually, blindness. With the advent of anti-retroviral medications in the United States, severe cases of CMV retinitis are now less common in American



Dr. Kalyani, right, lectures the Burmese clinicians.

AIDS patients. In Myanmar, however, lack of access to healthcare and the stigma associated with treating AIDS patients means that for most affected patients, this treatable infection often costs them their vision. This is a difficult reality for the patients seen at the clinic, some of whom had already gone blind. A particularly cruel irony is that, had many of them been screened and treated earlier, their eyesight might have been saved. It is this need for early screening and the lack of adequate healthcare in countries like Myanmar which makes work like this so vital.

Despite the struggles the Burmese patients face, Dr. Kalyani was impressed with their resilience and the loyalty of their friends and family, some of whom brought their loved ones great distances to be seen by the doctors. He hopes to continue this type of humanitarian work in the future, and is grateful to Dr. Heiden, the Jules Stein Eye Institute, and his advisor, Dr. Holland, for the experience.



This patient was brought to the clinic by his friend, a Burmese monk, who looks on as the patient's eyes are examined by a clinician.

## UCLA Mobile Eye Clinic

The UCLA Mobile Eye Clinic has provided general eye care to adults and children throughout Southern California since 1975. Supported by charitable contributions to the Jules Stein Eye Institute, a 39-foot-long bus specially equipped with eye examination equipment travels to schools, shelters, community health and senior citizen centers, health fairs, and organizations that assist homeless and low-income families. This past year, under the direction of **Anne L. Coleman, MD, PhD**, The Fran and Ray Stark Foundation Professor of Ophthalmology, approximately 5,000 patients were seen by the Mobile Eye Clinic staff and ophthalmic personnel.



Faye Oelrich, who manages the UCLA Mobile Eye Clinic and has been on its staff for more than 30 years, examines the binocular vision of a young patient.

## Jules Stein Eye Institute Affiliates Programs—A Year in Review

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

The Affiliates **Preschool Vision Screening** program completed its 12th year of service in 2011. This essential program, founded by Leonard Apt, MD, Founding Chief of the Division of Pediatric Ophthalmology and Strabismus and supported by Mrs. Gloria Kaufman and the Jules and Doris Stein UCLA Support Group, provides free vision screenings to the Los Angeles community. Under the supervision of four retired optometrists, Affiliates volunteers visited 25 local preschools during the 2010–2011 school year to screen 745 children, three-and-a-half to five years of age, for simple refractive errors and eye muscle problems.

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

The **MagniVision** program provides financial and volunteer support for the Jules Stein Eye Institute's **Vision Rehabilitation Center**. Volunteers work on site at the Center and train low-vision patients on the use of magnifiers and various vision aids. Financial assistance from the Affiliates enables the Center to purchase

new assistive and magnification devices for its lending library and supports its general needs.

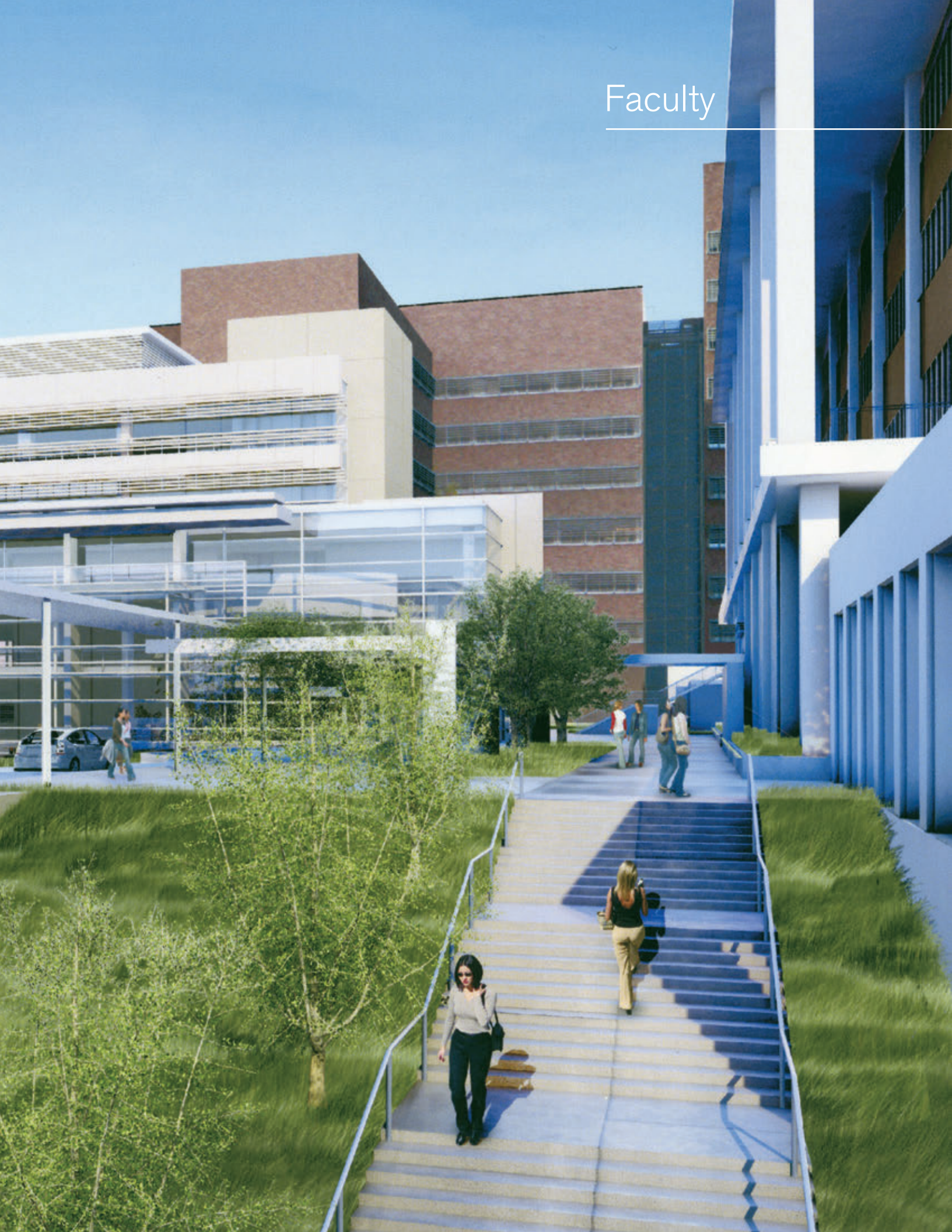
**Vision IN-School** is a vision education program offered free of charge to fourth- to sixth-grade students throughout Los Angeles. The curriculum is fun and interactive, covering the anatomy of the eye, eye safety, and optical illusions. Volunteers visited nine different schools this past year, presenting the curriculum to more than 280 elementary students. The program emphasizes eye safety and injury prevention in hopes of inspiring children to protect their precious gift of sight.

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

The Affiliates participated in the Foundation Fighting Blindness's annual **VisionWalk** to raise awareness and vital support to advance retinal eye disease research. Affiliates volunteers also participated in the summer 2011 **EyeSmart EyeCheck** community health initiative, providing free vision screenings for low-income patients.

# Faculty

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# Anthony J. Aldave, MD

Associate Professor of Ophthalmology

Director of the Cornea Service

Member of the Jules Stein Eye Institute

## RESEARCH SUMMARY

### Discovering the Genetic Basis of the Corneal Dystrophies

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

## Public Service

Chair, International Advisory Committee of Tissue Banks International

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

Vice Chair, American Academy of Ophthalmology Ethics Committee

Associate Examiner, American Board of Ophthalmology

Reviewer for many scientific journals

## Honors

Harold Stein Lecturer, Contact Lens Association of Ophthalmologists Annual Meeting, Las Vegas, Nevada

Invited Speaker, American Academy of Ophthalmology Annual Meeting, Chicago, Illinois

Invited Speaker, Keratoprosthesis Course, Weill Cornell Department of Ophthalmology, New York, New York

Invited Speaker, Cornea Connect Conference, Aravind Eye Hospital, Madurai, India

Invited Speaker, Asia Association for Research in Vision and Ophthalmology Annual Meeting, Singapore

Visiting Professor, Department of Ophthalmology, University of California, Davis

Invited Speaker, Vail Current Concepts in Ophthalmology Meeting, Vail, Colorado

Invited Speaker, American Society of Cataract and Refractive Surgery Annual Meeting, San Diego, California

Visiting Professor, Department of Ophthalmology, Dalhousie University, Halifax, Nova Scotia

Invited Speaker, Loma Linda Resident Research Annual Symposium, Loma Linda, California

Invited Speaker, Proctor Fellows Annual Retreat, Marshall, California

Jorge Rodriguez Memorial Lecturer, Department of Ophthalmology, University of Arizona, Tucson, Arizona

## Research Grants

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



## Anthony C. Arnold, MD

Jerome and Joan Snyder Professor of  
Clinical Ophthalmology

Chief of the Neuro-Ophthalmology Division

Director of the UCLA Optic Neuropathy Center

Member of the Jules Stein Eye Institute

### RESEARCH SUMMARY

#### Ischemic and Inflammatory Diseases of the Optic Nerve

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

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

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



### Public Service

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

Faculty, Lancaster Course in Ophthalmology, Colby College

Board Chair, North American Neuro-Ophthalmology Society

Board Director, American Board of Ophthalmology

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

Reviewer for many scientific journals

# Richard S. Baker, MD

Associate Professor of Ophthalmology

Provost and Dean of the College of Medicine,  
Charles R. Drew University of Medicine and Science

Associate Dean of the David Geffen  
School of Medicine at UCLA

Member of the Jules Stein Eye Institute

## RESEARCH SUMMARY

### Ophthalmic Epidemiology and Health Services Research

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

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

## Public Service

Board Member, California Medical Association

Board Member, Los Angeles County Medical Association

Board Member, Association of  
Minority Health Professions Schools

Co-Founder and Board Member, Los Angeles Eye Institute

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

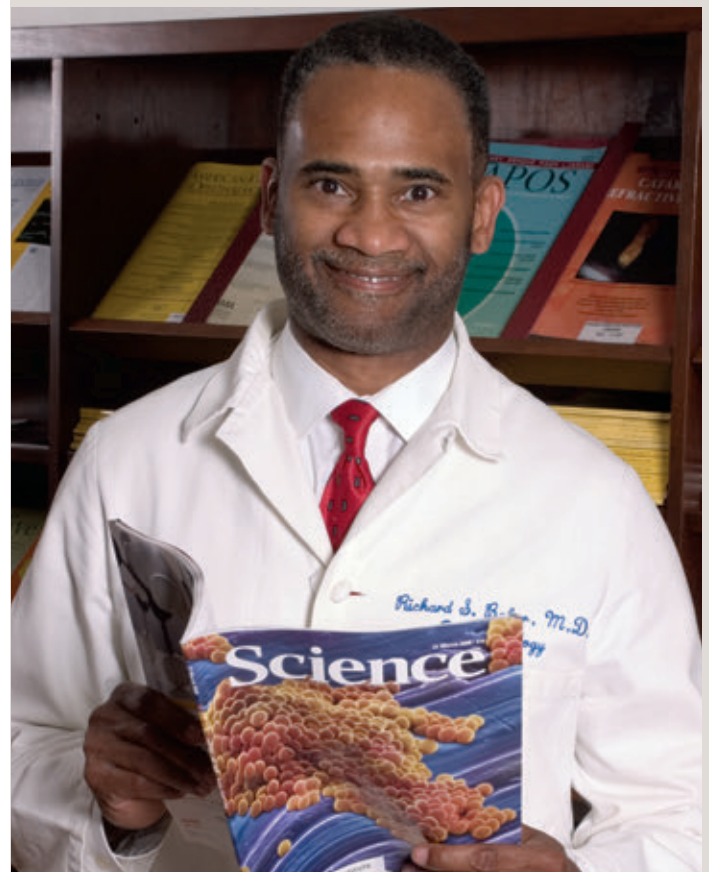
Member, South Los Angeles Health Care  
Leadership Roundtable

Reviewer for multiple NIH and AHRQ  
Special Emphasis Panels

Reviewer for many scientific journals

## Research Grants

Office of Minority Health, Department of Health and Human  
Services: Charles R. Drew University of Medicine and Science,  
Graduate Medical Education Project for the Improvement of  
Health Disparities in Medicine, 2/1/11–1/31/12





## Suraj P. Bhat, PhD

Associate Professor of Ophthalmology

Member of the Jules Stein Eye Institute

Member of the Molecular Biology Institute

### RESEARCH SUMMARY

#### Molecular Biology of Vision

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

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

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

Studies on the regulation of the expression of the small heat shock protein gene,  $\alpha B$ -crystallin are focused on heat-shock transcription factor 4 (HSF4), which Dr. Bhat's laboratory has reported to be the predominant heat shock transcription factor of the developing ocular lens and whose post-natal expression correlates with the most prevalent form of early childhood Lamellar cataracts. Dr. Bhat's laboratory has generated mouse models of this cataract, thus enabling first-time investigation of this childhood pathology.

Studies on the function of the  $\alpha B$ -crystallin protein in the lens and the RPE (in particular its relation to AMD) are focused on elucidating its 'non-crystallin' function, which is relevant both in the transparent and



non-transparent physiology. These investigations in Dr. Bhat's laboratory have led to the discovery of the secretion of  $\alpha B$ -crystallin from the RPE in lipoprotein vesicles known as exosomes, and initiated studies on elucidation of intercellular communication (via exosomes) in the RPE, in health and in disease.

#### Public Service

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

Assessor, NHMRC (National Health and Medical Research Council), Australia

Editor, *Molecular Vision*

Editorial Board Member, *Developmental Neuroscience*

Editorial Board Member, *International Journal of Biochemistry and Molecular Biology*, e-Century Publishing Corporation, USA

Reviewer for many scientific journals

#### Research Grants

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

## Dean Bok, PhD

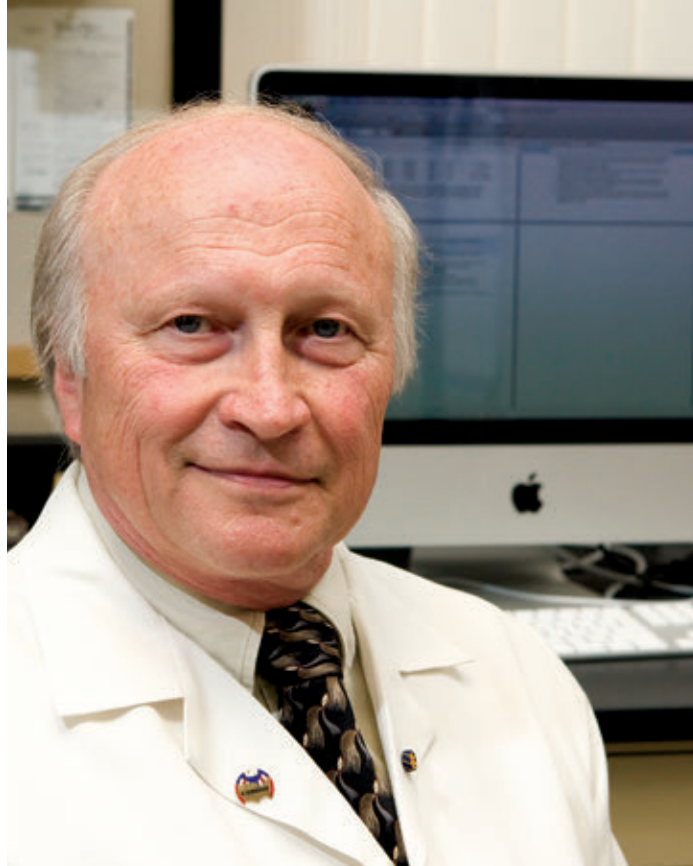
Dolly Green Professor of Ophthalmology  
Distinguished Professor of Neurobiology  
Member of the Jules Stein Eye Institute  
Member of the Brain Research Institute

### RESEARCH SUMMARY

#### Cell and Molecular Biology of the Retina

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

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



#### Public Service

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

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

Editorial Board Member, *International Review of Cytology*

Reviewer for many scientific journals

#### Research Grants

Macula Vision Research Foundation: Identification and Cellular Localization of Gene Products that Affect Photoreceptor Survival in Inherited Retinal Degeneration, 4/1/08–3/31/12

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

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

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

California Institute for Regenerative Medicine: Development of a Stem Cell-Based Transplantation Strategy for Treating Age-related Macular Degeneration (Principal Investigator: Gabriel Travis, MD, with other investigators), 11/1/09–10/31/12

# Joseph Caprioli, MD

David May II Professor of Ophthalmology

Chief of the Glaucoma Division

Member of the Jules Stein Eye Institute

## RESEARCH SUMMARY

### Causes and New Treatments for Glaucoma

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

#### Evaluation of Methods to Measure Rates of Glaucomatous Optic Nerve Damage

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

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

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

## Public Service

Chair, American Academy of Ophthalmology, Committee on Practice Improvement Task Force

Clinical Volunteer, Venice Family Clinic

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

Reviewer for many ophthalmic journals

## Honors

Arthur Light Lecturer, Fall Cataract/Glaucoma Symposium, Loyola University Medical Center, Maywood, Illinois

Kass Lecturer, Saint Louis University Eye Institute, St. Louis, Missouri

Armaly Lecturer, Annual Midwest Glaucoma Society Meeting, Iowa City, Iowa

## Research Grants

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



## Richard Casey, MD

Associate Clinical Professor of Ophthalmology  
Faculty of Charles Drew University of Medicine  
and Science

Member of the Jules Stein Eye Institute

### RESEARCH SUMMARY

#### Cornea External Disease

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

#### Public Health Services/Health Access

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

#### Public Service

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

Co-Founder and Chairman, The Los Angeles Eye Institute

President, The Los Angeles Ophthalmology  
Medical Group, Inc.



# Anne L. Coleman, MD, PhD

The Fran and Ray Stark Professor of Ophthalmology

Professor of Epidemiology

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

Member of the Jules Stein Eye Institute

Vice Chair of Academic Affairs,  
Department of Ophthalmology

## RESEARCH SUMMARY

### Glaucoma, Cataract, and Age-Related Macular Degeneration

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



## Public Service

Member, Awards Committee, Association for Research in Vision and Ophthalmology

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

Secretary for Quality Care, American Academy of Ophthalmology

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

Consultant, Ophthalmic Devices Panel, Food and Drug Administration

Chair, Program Committee, American Glaucoma Society

Member, Board of Trustees, Helen Keller International

Executive Editor, *American Journal of Ophthalmology*

## Honors

2010 Irving H. Leopold Lecturer, Allergan Pharmaceuticals

Inducted into The Most Venerable Order of The Hospital of St. John of Jerusalem

## Research Grants

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

Gerald Oppenheimer Family Foundation Center for the Prevention of Eye Disease: Prevention of Visual Impairment and Blindness In School-Age Children (Co-Principal Investigator), 1/1/10–12/31/10

Gerald Oppenheimer Family Foundation Center for the Prevention of Eye Disease: Disease Biomarker Classification by Microfluidic Digital PCR Genotyping from Surgical Patients Treated for Glaucoma (Co-Principal Investigator), 2010

The Ahmanson Foundation: In support of JSEI's Mobile Eye Clinic, to Provide Quality Eye Care to Underserved Populations, Particularly Children and the Elderly (Clinic Director), 2010

# Joseph L. Demer, MD, PhD

Leonard Apt Professor of Pediatric Ophthalmology

Professor of Neurology

Chief, Pediatric Ophthalmology and Strabismus Division

Member of the Jules Stein Eye Institute

## RESEARCH SUMMARY

### Motility and Vision

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

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 the optic nerve size in amblyopia, a common cause of visual loss in children.

## Public Service

Editorial Board Member, *Investigative Ophthalmology and Visual Science*

Associate Editor, *Strabismus*

Grant Reviewer, United States Public Health Service

Reviewer for many scientific and clinical journals

Scientific Advisory Committee Member: Knights Templars Eye Foundation and Eye Sight Foundation of Alabama

Council Member, International Strabismological Association

National Eye Institute Board of Scientific Counselors, *ad hoc* member

## Research Grants

National Eye Institute: Biomechanical Analysis in Strabismus Surgery, 5/1/11–4/30/16

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

Research to Prevent Blindness: Walt and Lilly Disney Award for Amblyopia Research, 7/1/04–12/31/11



# Sophie X. Deng, MD, PhD

Assistant Professor of Ophthalmology

Member of the Jules Stein Eye Institute

Member of the UCLA Jonsson  
Comprehensive Cancer Center

## RESEARCH SUMMARY

### Limbal Stem Cell Deficiency

Dr. Deng's research is focused on improving the current diagnosis and treatments for patients with limbal stem cell deficiency. One of the ongoing clinical studies that Dr. Deng conducts shows correlated cellular changes in the cornea and limbus using laser scanning *in vivo* confocal microscopy in patients with limbal stem cell deficiency. Damages to the limbal stem cells could be detected using this new technology and correlated with clinical presentation. This new technique could allow for a better understanding of the pathophysiology of limbal stem cell deficiency, a timely diagnosis and monitoring of disease progression.

Dr. Deng's laboratory studies the microenvironment/ niche of the limbal stem cells to elucidate those factors that govern the fate of limbal stem cells. The role of the Wnt signal transduction pathway in human limbal stem/progenitor cells is under investigation. Recent study in her laboratory reveals that activation of the Wnt/ $\beta$ -catenin promotes self-renewal of limbal stem cells. Use of small molecules to modulate Wnt signaling is being investigated to increase the efficiency of *ex vivo* expansion of limbal stem cells for transplantation. The second ongoing project in Dr. Deng's laboratory is to achieve patient specific therapy by regenerating autologous limbal stem cells in a xenobiotic-free culturing system for transplantation. The third research area is to study the homeostasis of the corneal epithelial cells in both normal and wound-healing conditions in a transgenic mouse model.



### Public Service

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

### Honors

2010 Investigator Award, Prevent Blindness America  
Translational Research Award, California Institute for  
Regenerative Medicine

### Research Grants

California Institute for Regenerative Medicine: Regeneration  
of Functional Human Corneal Epithelial Progenitor Cells,  
3/1/11–2/28/12  
Prevent Blindness America: Diagnosis and Staging of Limbal  
Stem Cell Deficiency Using *in Vivo* Laser, 7/1/10–6/30/11  
Inspire Pharmaceuticals, Inc.: A Randomized, Multicenter,  
Double-Masked, Placebo-Controlled, Parallel-Group  
Safety & Efficacy Study of Azithromycin Ophthalmic Solution,  
9/3/09–9/2/10

## Gordon L. Fain, PhD

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

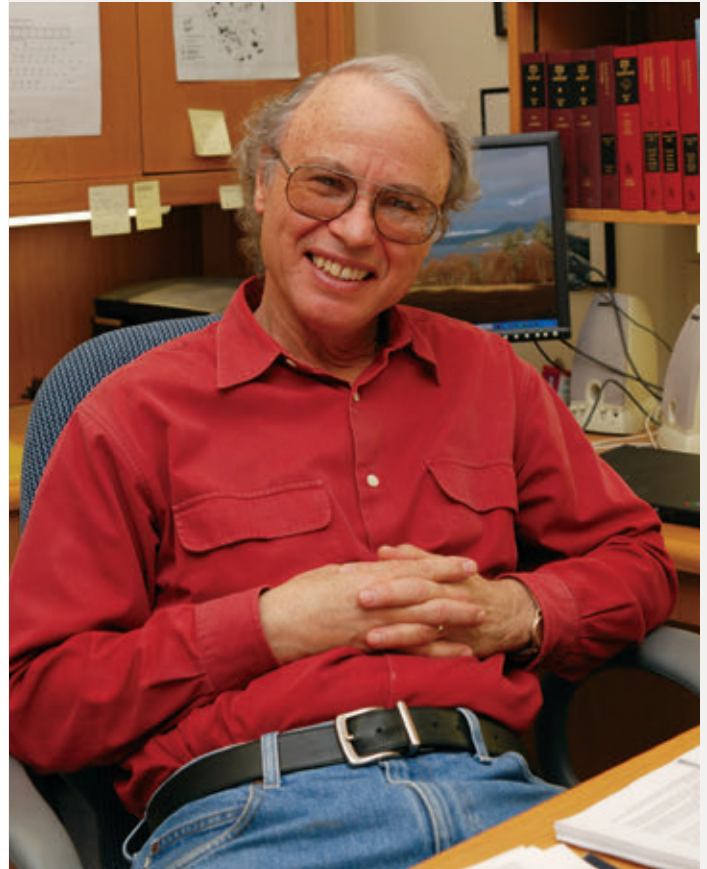
Member of the Jules Stein Eye Institute

### RESEARCH SUMMARY

#### Physiology of Photoreceptors in the Vertebrate Eye

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

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



#### Research Grants

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



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

Dr. Farber's group is also working on the mechanisms that regulate transcription and expression of retinal genes. They found that the transcription factor SP4 controls the activity of the  $\beta$ -PDE promoter and that mutations in both SP4 and  $\beta$ -transducin cause digenic arRP and cone-rod dystrophy (arCRD). Other projects include the identification of cone genes (mutations in *7R* and *ZBED4* cause arRP and arCRD); the characterization of animal models of ocular albinism, which are affected with permanent visual impairment; and the study of microvesicles released by mouse embryonic stem cells that transfer RNA or protein to other cells, *in vitro*.

## Public Service

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

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

## Research Grants

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

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



# JoAnn A. Giaconi, MD

Assistant Clinical Professor of Ophthalmology

Member of the Jules Stein Eye Institute

## RESEARCH SUMMARY

### Glaucoma

Dr. Giaconi's research focuses on the treatment of glaucoma and the effects of glaucoma surgery on the cornea and vision. She is currently working on a project examining the over- or under-treatment of glaucoma in the Veteran population. She is also enrolling patients in two clinical studies at the Jules Stein Eye Institute. One study is examining the effect of various glaucoma surgeries on the corneal endothelium, which is the layer of cells that keeps the cornea clear, and the other is investigating the postoperative eye pressure course following Ahmed valve implant surgery.

## Public Service

Member, Glaucoma Panel, American Academy of Ophthalmology Knowledge Base Development Project

Secretary, Women in Ophthalmology

Vice President, Los Angeles Society of Ophthalmology

Member, American Academy of Ophthalmology Liaisons Committee

Volunteer, Eye Care America

Reviewer for a number of ophthalmic journals

## Honors

2010 Mentoring for Advancement of Physician Scientist Award, American Glaucoma Society

2010 Achievement Award, American Academy of Ophthalmology

## Research Grants

American Glaucoma Society: Evaluation of Evidence-Based Glaucoma Practices at the VA, 9/1/10–8/31/12

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



## Ben J. Glasgow, MD

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

### RESEARCH SUMMARY

#### Ophthalmic Pathology

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



#### Public Service

Reviewer for many scientific journals

#### Research Grants

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

## Robert Alan Goldberg, MD

Karen and Frank Dabby Professor of Ophthalmology

Chief of the Orbital and Ophthalmic  
Plastic Surgery Division

Director of the UCLA Orbital Disease Center

Co-Director of the UCLA Aesthetic Center

Member of the Jules Stein Eye Institute

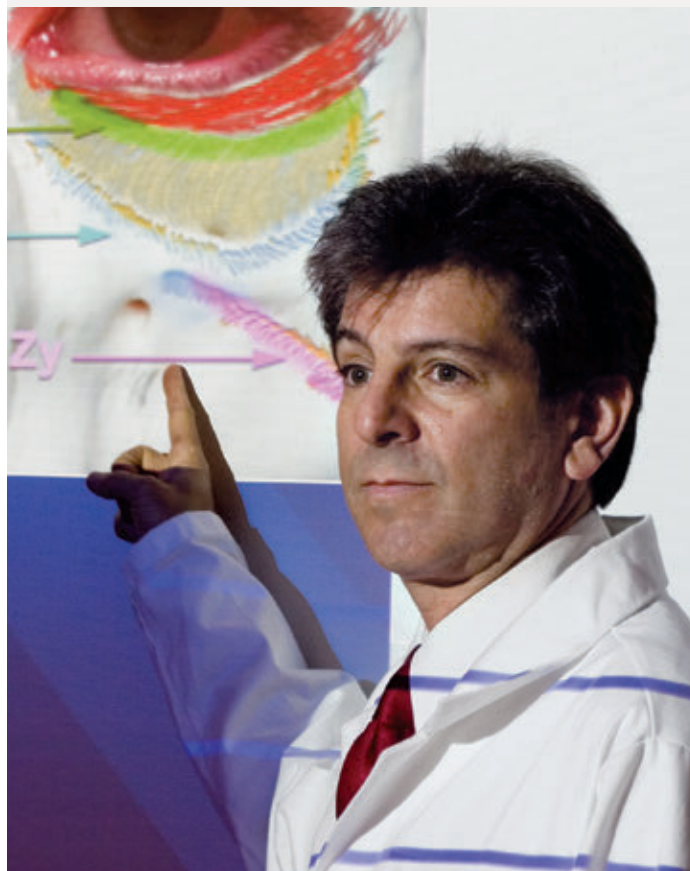
### RESEARCH SUMMARY

#### Diseases and Therapy of the Eyelid and Orbit

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

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

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



#### Public Service

Assistant Vice President of Professional Education,  
California Academy of Ophthalmology

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

Fellowship Program Director, American Academy of  
Cosmetic Surgery

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

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

#### Honors

2010 Secretariat Award, American Academy  
of Ophthalmology

Invited Speaker, Masters Symposium, Sydney, Australia

Lecturer, Krieger Eye Institute, Baltimore, Maryland

Invited Speaker and Program Committee Member,  
Multispecialty Foundation Meeting, Las Vegas, Nevada

# Lynn K. Gordon, MD, PhD

Associate Professor of Ophthalmology

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

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

Member of the Jules Stein Eye Institute

## RESEARCH SUMMARY

### Retinal Cell Biology and Inflammatory Disease

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

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

## Public Service

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

Member, Scientific Review Committee, Fight for Sight

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

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

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

President, Women in Ophthalmology

## Research Grants

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



## Michael B. Gorin, MD, PhD

Harold and Pauline Price Professor of Ophthalmology

Chief of the Division of Retinal Disorders and  
Ophthalmic Genetics

Member of the Jules Stein Eye Institute

### RESEARCH SUMMARY

#### Hereditary Eye Disorders and Molecular Genetics of Age-Related Maculopathy

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

Dr. Gorin and other scientific collaborators investigate the molecular genetics of complex disorders such as cystoid macular edema, age-related cataracts, and glaucoma, as well as monogenic disorders such as hereditary retinal degenerations, glaucoma, cataracts, and ocular syndromes. He is also pursuing studies to identify genetic variations that contribute to the severity, complications, and therapeutic responses of these conditions.

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

Clinical research efforts are also directed towards the development of methods to monitor and quantify retinal function in progressive retinal disorders (such as diabetic retinopathy, Stargardt disease, and retinitis pigmentosa) and in patients with potential ocular toxicities from systemic medications (such as Plaquenil and tamoxifen).

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



### Public Service

Medical Director, Jules Stein Eye Institute's Electronic Medical Record System

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

Advisory Board Member,  
American Health Assistance Foundation

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

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

Scientific Advisory Committee Member, the American Health Assistance Foundation and the Knights Templar Eye Research Foundation

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

Listed by Castle Connolly Medical, Ltd. as one of America's top doctors since 2006

Reviewer for many scientific journals

### Research Grants

National Eye Institute: Genetics of Age-Related Maculopathy (received an ARRA Administrative Supplement), 1/1/06–12/31/11

National Eye Institute: Jules Stein Eye Institute Core Grant for Vision Research, Module Director, 3/1/10–2/28/15

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

Neuro Kinetics, Inc.: Rapid, Non-Invasive, Regional Functional Imaging of Diabetic Retina, 9/1/10–11/30/11

Foundation Fighting Blindness: Clinical and Genetic Characterization of Stargardt and Stargardt-like Macular Dystrophies: The Potential Role of AMD Risk Factors on the Severity and Progression of these Macular Dystrophies, Principal Investigator, 6/1/11–6/30/13

# David Rex Hamilton, MD, FACS

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

## RESEARCH SUMMARY

### Corneal Biomechanics and Tomography

Dr. Hamilton's research interests are in the areas of corneal biomechanics and tomography (3D imaging of the cornea), screening for corneal ectatic disorders, and refractive surgical techniques to treat patients with complications from previous refractive surgery. He is also interested in the clinical study of intraocular lenses (IOLs) for the treatment of high myopia (Phakic IOLs) and presbyopia (multifocal and accommodating "premium" IOLs).

Dr. Hamilton is actively involved in training residents and fellows in the surgical treatment of refractive errors and cataracts.



## Public Service

Editorial Board Member: *Ophthalmology*; *Journal of Refractive Surgery*; and *Journal of Cataract and Refractive Surgery*

Member, Refractive Leadership Council, Alcon Laboratories

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

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

## Honors

2010 Achievement Award, American Academy of Ophthalmology

## Research Grants

Departmental Unrestricted Research Grant, 2010

Departmental Unrestricted Research Grant, 2011

## Gary N. Holland, MD

Jack H. Skirball Professor of Ocular  
Inflammatory Diseases

Chief of the Cornea and Uveitis Division

Director of the Ocular Inflammatory Disease Center

Director of the Jules Stein Eye Institute  
Clinical Research Center

Member of the Jules Stein Eye Institute

### RESEARCH SUMMARY

## Uveitis and Cornea-External Ocular Diseases

Dr. Holland's research interests involve infectious and inflammatory diseases of the eye. A major focus of current research is ocular toxoplasmosis, the most common retinal infection in the general population. Dr. Holland is conducting epidemiological and laboratory investigations in collaboration with investigators at the National Institutes of Health, the U.S. Centers for Disease Control and Prevention, and other universities to understand the sources of infection, course of disease, response to treatment, and disease outcomes.

Since 1981, Dr. Holland has been involved in the study of HIV-related eye disease. Studies are being performed to investigate risk factors for development of cytomegalovirus (CMV) retinitis, a blinding infection among severely immunosuppressed patients. Dr. Holland is participating in a large, multicenter study to investigate how the ocular manifestations of HIV disease have changed since the introduction of potent antiretroviral drugs. He is also investigating subtle changes in vision known to occur in HIV-infected individuals. These visual changes may affect an individual's quality of life and may reflect changes in general health.

In conjunction with members of the Department of Pediatrics, Dr. Holland has established a program to provide care for children with uveitis. He is investigating risk factors for development of vision-threatening complications among children with juvenile rheumatoid arthritis and uveitis, and is studying the most effective techniques for evaluation and treatment of uveitis in children.

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



### Public Service

Associate Editor, *American Journal of Ophthalmology*

Executive Committee Member, American Uveitis Society

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

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

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

International Council Member, International  
Ocular Inflammation Society

### Honors

Featured Speaker, National Youth Leadership  
Forum on Medicine (NYLF/MED)

### Research Grants

Advanced Cell Technology, Academic Research Organization  
for Research with Retinal Cells Derived from Stem Cells for  
Age-Related Macular Degeneration, 5/31/11–5/30/13

Advanced Cell Technology, Academic Research Organization  
for Research with Retinal Cells Derived from Stem Cells for  
Stargardt's Macular Dystrophy, 4/25/11–4/24/13

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

National Eye Institute, UCLA/AUPO Introduction to  
Clinical Research Course, 9/1/10–8/31/11

amfAR AIDS Research, International Conference on  
AIDS-related CMV Retinitis, 8/1/10–7/31/11

Elizabeth Taylor AIDS Foundation, International Conference  
on AIDS-related CMV Retinitis, 8/1/10–7/31/11

Arthritis Foundation, Southern California Chapter, Consensus  
Conference on JIA-associated Uveitis, 4/8/11–4/9/11



# Joseph Horwitz, PhD

Oppenheimer Brothers Professor of Ophthalmology

Distinguished Professor of Ophthalmology

Member of the Jules Stein Eye Institute

## RESEARCH SUMMARY

### Biochemistry and Biophysics of the Crystalline Lens

Dr. Horwitz is conducting research on the biochemical and biophysical properties of normal and cataractous lens proteins. In his laboratory, techniques have been developed for the microdissection of single human cataractous lenses and for separating, with the aid of a microscope, opaque areas and adjacent normal areas. The cataractous and normal lens sections are then studied with the aid of a high-performance liquid chromatography system that separates the chemical substances. This work should provide valuable information about the lens proteins, and contribute directly to understanding the processes involved in the development of cataracts. In addition, Dr. Horwitz is investigating the molecular chaperone properties of the lens'  $\alpha$ -crystallin, a protein that plays an important role in keeping the eye lens clear during normal aging. Alpha-crystallin is also involved in age-related macular degeneration, as well as in many other neurodegenerative diseases.

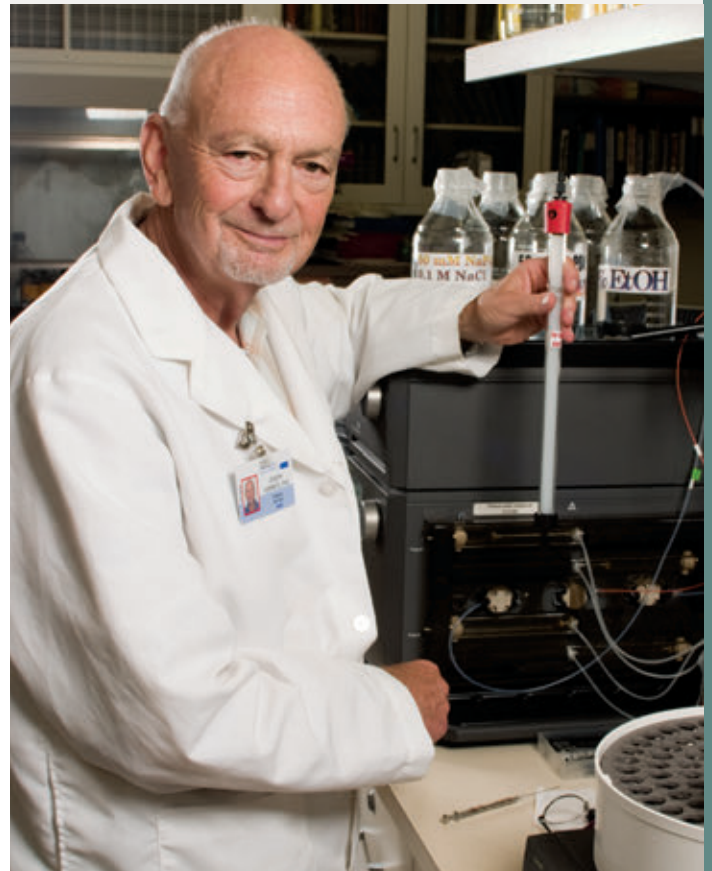
## Public Service

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

Reviewer for many scientific journals

## Research Grants

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



## Wayne L. Hubbell, PhD

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

### RESEARCH SUMMARY

#### Retinal Photoreceptor Membrane Structure and Function

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

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

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



### Public Service

Member, National Academy of Sciences  
Member, American Academy of Arts and Sciences

### Honors

Zacharias Dische Award and Lecture from the Department of Ophthalmology, Columbia University

### Research Grants

National Eye Institute: Molecular Basis of Membrane Excitation, 5/1/05–4/30/15

National Eye Institute: Core Grant for Vision Research at the Jules Stein Eye Institute (received an ARRA Administrative Supplement), 3/1/10–2/28/15

# Jean-Pierre Hubschman, MD

Assistant Professor of Ophthalmology  
Member of the Jules Stein Eye Institute

## RESEARCH SUMMARY

### Advanced Vitreoretinal Surgical Interventions and Robotics

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



## Public Service

Reviewer for many ophthalmic journals

## Research Grants

Advanced Cell Technology: Research with Retinal Cells Derived from Stem Cells for Stargardt's Macular Dystrophy (Principal Investigator: Steven D. Schwartz, MD), 3/23/11–3/22/13

Advanced Cell Technology: Research with Retinal Cells Derived from Stem Cells for Age-Related Macular Degeneration (Principal Investigator: Steven D. Schwartz, MD), 4/5/11–4/5/13

ThromboGenics, Inc.: A Randomized, Placebo-Controlled, Double-Masked, Multicenter Trial of Microplasmin Intravitreal Injection for Non-Surgical Treatment of Focal Vitreomacular Adhesion (Principal Investigator: Steven D. Schwartz, MD), 3/3/09–9/3/10

National Institutes of Health: A Multicenter, Randomized Trial of Lutein, Zeaxanthin, and Omega-3 Long-Chain Polyunsaturated Fatty Acids in Age-Related Macular Degeneration (Principal Investigator: Steven D. Schwartz, MD), 1/1/06–12/31/12

National Institutes of Health: Non-contact, THz Sensing of Corneal Hydration (Principal Investigator: Warren S. Grundfest, MD), 4/5/11–4/4/12

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

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

## Sherwin J. Isenberg, MD

Laraine and David Gerber Professor of  
Pediatric Ophthalmology

Professor of Pediatrics

Vice-Chairman of the UCLA Department  
of Ophthalmology

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

Member of the Jules Stein Eye Institute

### RESEARCH SUMMARY

#### **Pediatric Ophthalmology, Amblyopia, and Ophthalmic Pharmacology**

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

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



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

#### **Public Service**

Member, Medical Advisory Board and Board of Directors;  
and Research Committee Chair, Blind Children's Center  
President, Costenbader Pediatric Ophthalmology Society

#### **Honors**

Transforming Lives Award, CRE Outreach

#### **Research Grants**

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

## Allan E. Kreiger, MD

Professor of Ophthalmology Emeritus (Active Recall)

Founding Chief of the Retina Division

Member of the Jules Stein Eye Institute

### RESEARCH SUMMARY

#### Retinal Disease and Vitreoretinal Surgery

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

### Public Service

Reviewer for many scientific journals

### Honors

Alex Irvine Award, Western Retina Study Club



# Simon K. Law, MD, PharmD

Associate Clinical Professor of Ophthalmology

Member of the Jules Stein Eye Institute

## RESEARCH SUMMARY

### Optic Disc Evaluation

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

Dr. Law is evaluating the optic nerve appearance in patients with age-related macular degeneration and high myopia. For patients with age-related macular degeneration, the purpose of the research is to characterize the appearance of the optic nerve at different stages of macular degeneration and evaluate for any change in appearance over time corresponding to the progression of macular degeneration. For patients with high myopia, the research is to characterize the optic disc structural features in eyes with high myopia and glaucoma, and identify optic disc risk factors in developing glaucoma in this group of patients.

### Glaucoma Tube Shunt Procedure

In other studies, Dr. Law is comparing the results of two commonly used tube shunt devices for glaucoma, the Baerveldt implant and Ahmed glaucoma valve. Patients who require a tube shunt procedure to control glaucoma are randomized to receive either one of the two devices and are followed over a period of five years. He also is evaluating the effects of different timing in adding antiglaucoma medications after an Ahmed glaucoma valve procedure.

## Public Service

Expert Reviewer, Medical Board of California

Pharmacy Editor, eMedicine online Ophthalmology Journal

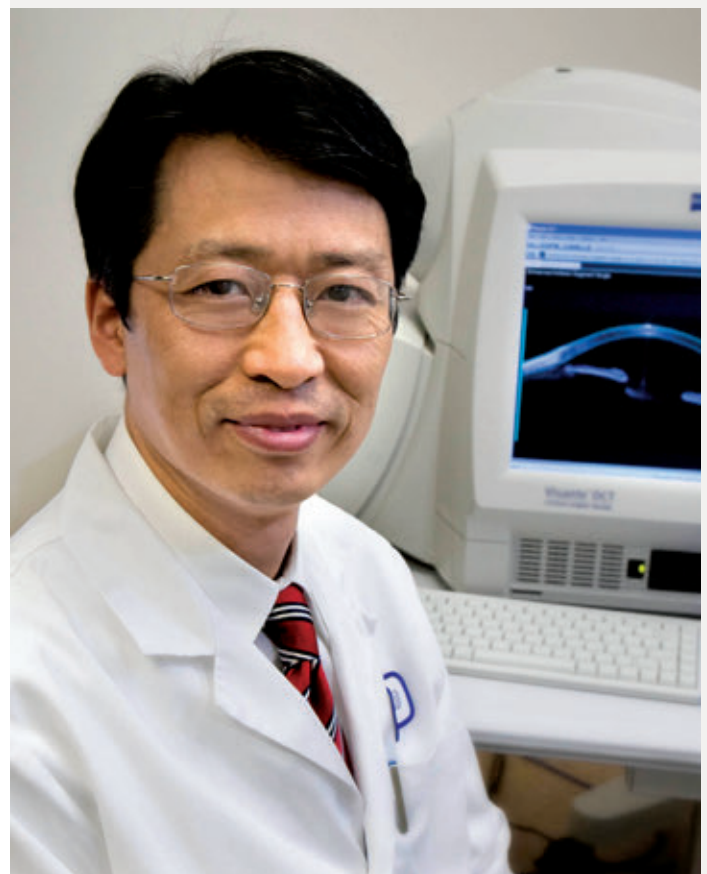
Member of the Committee on Aging,  
American Academy of Ophthalmology

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

Reviewer for many scientific journals

## Research Grants

Oppenheimer Complimentary: Alternative and  
Integrative Medicine Grant



# Ralph D. Levinson, MD

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

## RESEARCH SUMMARY

### Ocular Inflammatory Diseases

Dr. Levinson's research interest is ocular inflammatory diseases. He is the primary investigator on international research projects in both the clinical aspects of uveitis and the basic mechanisms and immunogenetics of ocular inflammation. Current projects include a collaborative longitudinal study of a chronic inflammatory disease, birdshot chorioretinopathy, with investigators in France. The study focuses on the interrelationship of disease factors, as well as the course of disease and response to treatment. Dr. Levinson is also studying the genetic components of the several forms of ocular inflammation in collaboration with investigators in the United States, France, Mexico, and Japan.



### Public Service

Member, ONE Uveitis Committee, American Academy of Ophthalmology

Member, Uveitis Panel, Academy of Ophthalmology  
Practicing Ophthalmologists Curriculum

Reviewer for many scientific journals

### Research Grants

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

# Colin A. McCannel, MD

Associate Professor of Clinical Ophthalmology

Member of the Jules Stein Eye Institute

## RESEARCH SUMMARY

### Vitreoretinal Surgery

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

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

## Public Service

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

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

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

Medical Information Technology Committee Member, American Academy of Ophthalmology

Reviewer for many scientific journals

## Honors

"Best Paper" of session, Retina/Vitreous Original Papers, Part 1—American Academy of Ophthalmology 2010 Annual Meeting





# Tara A. McCannel, MD, PhD

Assistant Professor of Ophthalmology

Director of the Ophthalmic Oncology Center

Member of the Jules Stein Eye Institute

## RESEARCH SUMMARY

### Metastatic Ocular Melanoma

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

### Surgical Approaches to Vitreoretinal Disease and Cancer

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

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

### Health Psychology and Ocular Melanoma

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



### Public Service

Reviewer for many scientific journals

### Research Grants

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

## Kevin M. Miller, MD

Kolokotronis Professor of Clinical Ophthalmology  
Chief of the Comprehensive Ophthalmology Division  
Member of the Jules Stein Eye Institute

### RESEARCH SUMMARY

#### Cataract and Refractive Surgery

Dr. Miller's research interests are in cataract and refractive surgery, intraocular lenses, artificial iris implants, ophthalmic optics, surgical devices, and surgical outcomes. He performs much of his research in collaboration with Michael D. Olson, OD, PhD, and trainees at UCLA.

Dr. Miller's clinical practice focuses primarily on refractive cataract surgery and the surgical correction of presbyopia and astigmatism with premium technology intraocular lenses. He developed an Astigmatism Management service for treating corneal astigmatism at the time of cataract surgery that optimizes postoperative uncorrected visual acuity. He developed a nomogram for peripheral corneal relaxing incisions, and participated in the clinical trial of the world's most popular toric intraocular lens. He described a nonparametric multivariate technique for comparing astigmatism outcomes between treatment groups. He also performs DSEK, LASIK, and other cornea-based laser refractive surgery.

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

Dr. Miller is heavily involved in planning the patient care spaces that will be contained in the new Edie and Lew Wasserman Building.

### Public Service

Chairman, American Academy of Ophthalmology, Anterior Segment Compass Committee

Member, American Academy of Ophthalmology, Skills Transfer Course Advisory Committee

Member, American Academy of Ophthalmology, Performance Measurement Development Workgroup

Member, American Academy of Ophthalmology, Annual Meeting Program Committee

Member, American Society of Cataract and Refractive Surgery Retina Clinical Committee (anterior segment representative)

Program Planning Committee, World Congress of Ophthalmology

Reviewer for multiple ophthalmic journals

### Research Grants

Physical Optics Corp./NIH: Clinical Testing of the Tracking Adaptive-Optic Scanning Laser Ophthalmoscope, 1/15/11–9/29/11



## Bartly J. Mondino, MD

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

### RESEARCH SUMMARY

#### Cornea and External Ocular Diseases and Immunological Disorders

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



#### Public Service

Medical Advisory Board Member, Braille Institute  
Board of Trustees Member, Association of University Professors of Ophthalmology  
Executive Vice-President, Association of University Professors of Ophthalmology  
Editorial Board Member, *Ophthalmic Surgery, Lasers and Imaging*  
Editor, Association of University Professors of Ophthalmology, *News & Views*  
Board of Directors Member, National Alliance for Eye and Vision Research

#### Research Grants

Research to Prevent Blindness: Departmental Unrestricted Grant Award (annual), 2009–2010  
Bruce Ford and Anne Smith Bundy Foundation: Grant Award (annual), 2009–2010  
National Eye Institute: UCLA/AUPO Introduction to Clinical Research Course, 2010–2012

## Kouros Nouri-Mahdavi, MD, MSc

Assistant Professor of Ophthalmology  
Member of the Jules Stein Eye Institute

### RESEARCH SUMMARY

#### Role of Imaging and Perimetry in Glaucoma Detection and Progression

Dr. Nouri-Mahdavi's research is focused on improving methods to detect early glaucoma and glaucoma progression with perimetry and newer imaging techniques. His recent work in imaging addresses performance of the newer spectral-domain optical coherence tomography (SD-OCT) devices for determining peripapillary changes and delineating the disc border. SD-OCT may be redefining the current concepts regarding definition of the disc border and estimation of disc size in glaucoma patients. Dr. Nouri-Mahdavi is also interested in exploring the structure-function relationships in eyes with angle-closure glaucoma versus eyes with primary open-angle glaucoma. Two OCT imaging studies enrolling open-angle and angle-closure glaucoma patients along with normal control subjects are ongoing in the Glaucoma Division. A longitudinal study using the newer OCT imaging algorithms such as enhanced-depth imaging is being planned.

Another area of research and clinical interest for Dr. Nouri-Mahdavi is surgical outcomes in glaucoma and newer surgical techniques. The effect of cataract surgery on intraocular pressure control in advanced glaucoma patients is of significant interest to general ophthalmologists and glaucoma specialists alike, and will soon be the focus of an upcoming investigation by the research team at the Glaucoma Division.



#### Public Service

Contributing Member of the  
2011 World Glaucoma Consensus  
Volunteer for EyeCare America  
Editorial Board Member,  
*Journal of Ophthalmic and Vision Research*  
Reviewer for a number of ophthalmology journals

#### Honors

Invited Speaker, Glaucoma Surgery Day,  
American Glaucoma Society Annual Meeting,  
Dana Point, California  
Invited Moderator, "Breakfast with the Experts,"  
American Glaucoma Society Annual Meeting,  
Dana Point, California

#### Research Grants

American Glaucoma Society Mentoring for Advancement of  
Physician-Scientists (MAPS) Award: Evaluating the Role of  
Pattern ERG in Glaucoma, 9/1/10–8/31/11  
American Glaucoma Society Young Clinician Scientist Award:  
Optimizing Imaging of the Retinal Nerve Fiber Layer with  
Spectral-Domain Optical Coherence Tomography,  
4/1/11–12/31/11

# Steven Nusinowitz, PhD

Associate Professor of Ophthalmology  
Co-Director of the Visual Physiology Laboratory  
Member of the Jules Stein Eye Institute

## RESEARCH SUMMARY

### Mechanisms of Retinal Degeneration

Dr. Nusinowitz's primary research interest is focused on understanding the cellular contributions to non-invasive measures of visual function and defining the sites and mechanisms of disease action in inherited retinal and visual pathway disorders. His main approach to gaining an understanding of the site and underlying mechanism of disease action in humans is to study the patterns of electrophysiological and psychophysical responses obtained from mice in which the disruption of different cells or pathways in the visual system are specifically targeted by genetic manipulation. By comparing the patterns of responses in human disease with the patterns of responses from rodents with targeted cellular disruption, Dr. Nusinowitz is able to test hypotheses about the underlying pathophysiology in human disease and to provide a mechanism for the development of specific diagnostic tools that are sufficiently sensitive for early detection and better diagnosis of clinical disease.



## Public Service

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

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

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

Scientific Advisor: The Mouse Mutant Resource, The Jackson Laboratory; Novartis Pharmaceuticals; Allergan, Inc.; and Revision Therapeutics, Inc.

Director, JSEI Electrophysiology Reading Center, Visual Physiology Laboratory, and Live Imaging and Functional Evaluation (LIFE) Core

## Research Grants

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

California Institute for Regenerative Medicine: Development of a Stem Cell-Based Transplantation Strategy for Treating Age-Related Macular Degeneration (Principal Investigator: Gabriel H. Travis, MD, with other investigators), 11/1/09–10/31/12

National Institutes of Health/National Eye Institute: Jules Stein Eye Institute Core Grant for Vision Research, for shared-use core facilities among investigators at the Jules Stein Eye Institute (Module Co-Director), 3/1/10–2/28/15

UCLA/Foundation Fighting Blindness Center Grant: Module I: Clinical characterization and correlation with molecular genetic studies of individuals with suspected Stargardt Disease (Co-Investigator), 7/1/10–6/30/13

Research to Prevent Blindness (Unrestricted Department Grant): Characterizing Visual Function in HIV-infected Patients (Principal Investigator), 4/25/11–4/1/12

# Stacy L. Pineles, MD

Assistant Professor of Ophthalmology  
Member of the Jules Stein Eye Institute

## RESEARCH SUMMARY

### Pediatric Neuro-Ophthalmology and Neurologic Causes of Strabismus

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



## Public Service

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

Associate Residency Director, Department of Ophthalmology

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

Reviewer for a number of ophthalmologic journals

## Honors

Invited Speaker, Pacific Coast Ophthalmology and Otolaryngology Society Meeting, Kahuku, Hawaii

## Research Grants

Jaeb Center for Health Research: A Randomized Clinical Trial of Observation Versus Occlusion Therapy for Intermittent Exotropia, 2/28/11–12/31/13

## Natik Piri, PhD

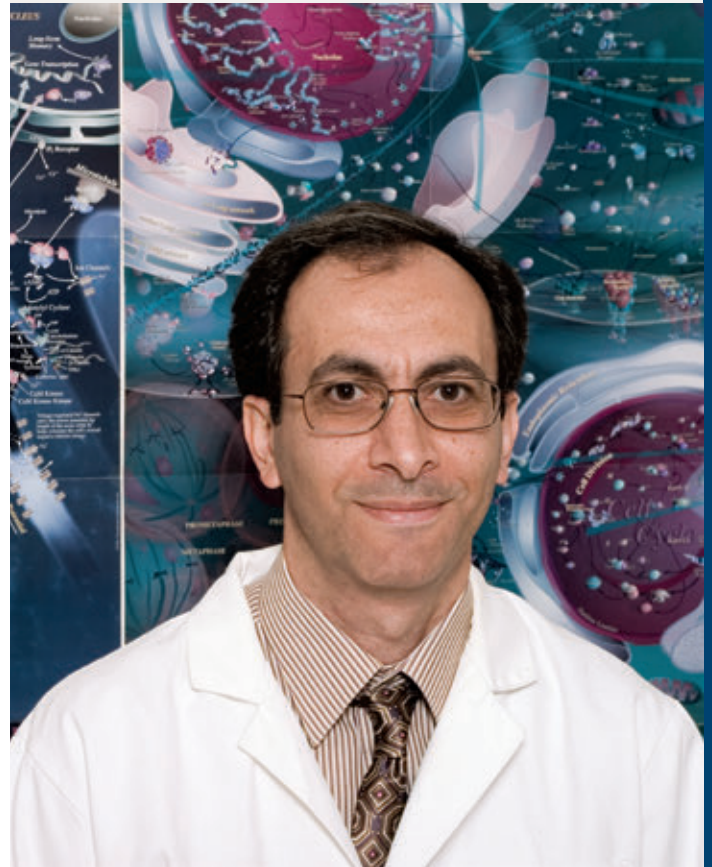
Associate Professor of Ophthalmology  
Member of the Jules Stein Eye Institute

### RESEARCH SUMMARY

#### **Biochemistry and Molecular Biology of Retinal Ganglion Cells; Mechanisms of Retinal Ganglion Cell Degeneration in Optic Neuropathies**

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

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



#### **Public Service**

Reviewer for many scientific journals

#### **Research Grants**

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

## David Sarraf, MD

Associate Clinical Professor of Ophthalmology

Member of the Jules Stein Eye Institute

### RESEARCH SUMMARY

#### Age-Related Macular Degeneration and Crystalline Maculopathy

Dr. Sarraf has credits in approximately 50 publications (including chapters, review papers, case reports, case series, and scientific papers) and has published 40 Pub Med articles. His most important contribution involves wet age-related macular degeneration (ARMD), specifically the subject of retinal pigment epithelial (RPE) detachment and RPE tears. Dr. Sarraf was one of the first to describe RPE tears and to determine the risk factors leading to RPE tears after anti-vascular endothelial growth factor (VEGF) therapy. He recently published a new grading system for RPE tears and was one of the first to describe evolving RPE tears both pre- and post-anti-VEGF therapy. Dr. Sarraf has received a financial grant to conduct a prospective trial (nearing completion) comparing low-dose and high-dose Lucentis therapy for fibrovascular pigment epithelial detachments (PEDs). This study has allowed further insight into therapy for PEDs and the risk factors and mechanisms leading to RPE tears.

Dr. Sarraf has also identified novel retinal diseases, specifically as pertains to crystalline retinopathy. He was the first to describe West African Crystalline Maculopathy and Triamcinolone-Associated Crystalline Maculopathy. Studies on both topics were published in the Archives of Ophthalmology.

### Public Service

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

Director, Lasers in Ophthalmology Course

Co-Director, Los Angeles Imaging Conference for Retinal Specialists

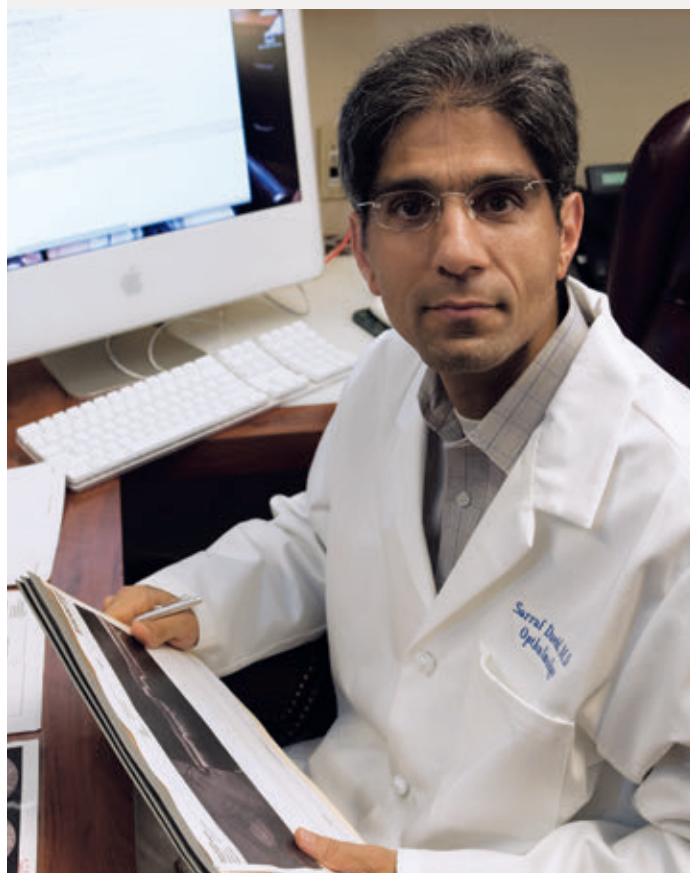
Reviewer for over 20 scientific journals

### Honors

Elected to the Macula Society

### Research Grants

Southern California Desert Retina Consultants: Ranibizumab (Lucentis) for Treating Submacular Vascularized PED, 7/2/10–6/30/12





# Steven D. Schwartz, MD

Ahmanson Professor of Ophthalmology

Chief of the Retina Division

Director of the UCLA Diabetic Eye Disease and Retinal Vascular Center

Co-Director of the Macula Center

Professor-in-Residence of Ophthalmology

Member of the Jules Stein Eye Institute

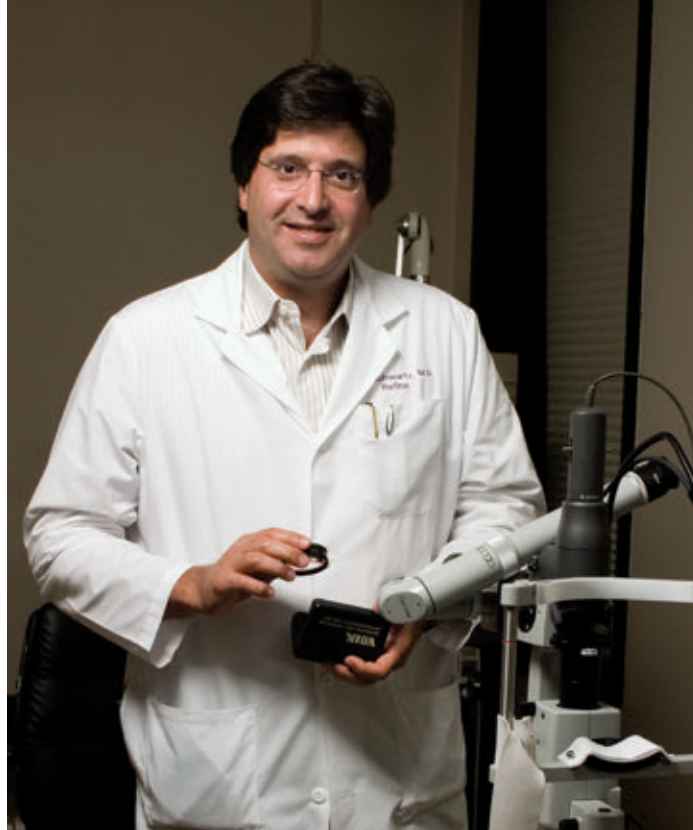
## RESEARCH SUMMARY

### Retinal Diseases

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

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

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



### Public Service

Board Member, American Society of Retinal Specialists

Program Committee Member, Association for Research in Vision and Ophthalmology

Diabetic Eye Disease Screening, Venice Family Clinic

### Honors

2011 ARVO Silver Fellow, Association for Research in Vision and Ophthalmology

### Research Grants

Advanced Cell Technology, Inc.: Research with Retinal Cells Derived from Stem Cells for Age-Related Macular Degeneration, 4/5/11–4/5/13

Advanced Cell Technology, Inc.: Research with Retinal Cells Derived from Stem Cells for Stargardt's Macular Dystrophy, 3/23/11–3/22/13

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

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

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

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

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

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

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

## Hui Sun, PhD

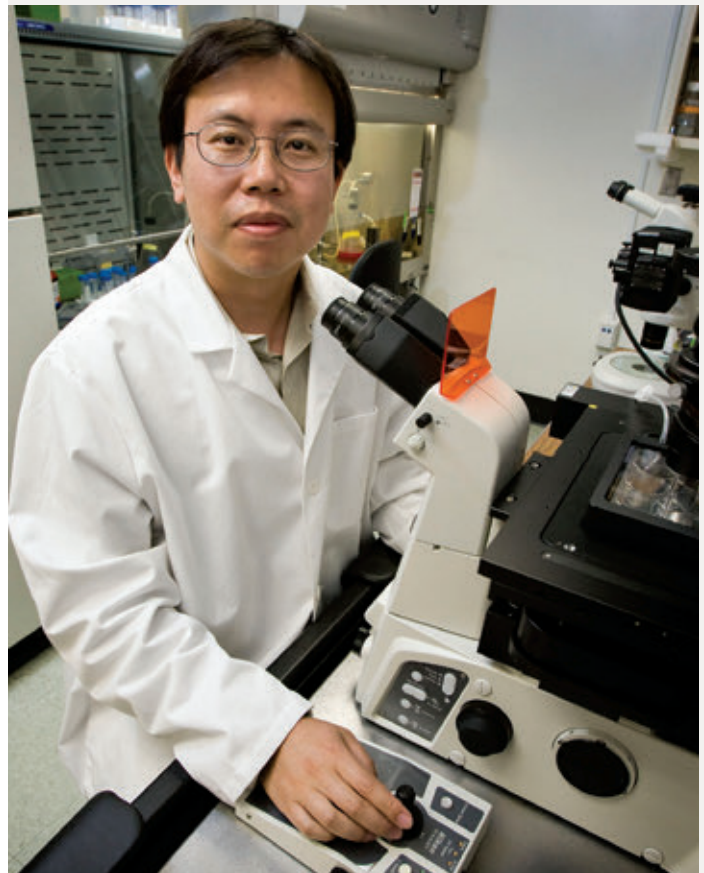
Associate Professor of Physiology and Ophthalmology

Member of the Jules Stein Eye Institute

### RESEARCH SUMMARY

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

Dr. Sun's laboratory studies the molecular mechanism of vitamin A transport for vision and new therapeutic targets for blinding diseases such as age-related macular degeneration. Vitamin A deficiency is the leading cause of blindness in third world countries, and age-related macular degeneration is a leading cause of blindness in the developed world. Vitamin A is essential for vision because it is the precursor for the chromophore of photoreceptor proteins and also plays critical roles in eye development. Plasma retinol binding protein (RBP) is the principal carrier of vitamin A in the blood and is essential for mobilizing the hepatic vitamin A store. Dr. Sun's laboratory identified the long-sought RBP receptor as a multi-transmembrane protein of previously unknown function. It functions simultaneously as a membrane receptor and a membrane transporter that mediates cellular uptake of vitamin A. The RBP/RBP receptor system represents a rare example in eukaryotic cells of a small molecule delivery system that involves an extracellular carrier protein but does not depend on endocytosis. Human genetic studies found that the RBP receptor is essential for the formation of the human eye and many other organs, consistent with the critical role of vitamin A in embryonic development. Dr. Sun's laboratory is using a variety of techniques to study this membrane transport system. His group is also developing new techniques to identify new therapeutic targets for major blinding diseases such as age-related macular degeneration.



### **Public Service**

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

Reviewer for many scientific journals

### **Honors**

Early Career Scientist Award, Howard Hughes Medical Institute

### **Research Grants**

National Eye Institute: Molecular Mechanism of Vitamin A Uptake for Vision, 9/30/07–8/31/12

Howard Hughes Medical Institute, 9/1/09–8/31/15

Ellison Medical Foundation: New Scholar Award, 9/1/06–8/31/10

## Gabriel H. Travis, MD

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

### RESEARCH SUMMARY

## Biochemistry of Vertebrate Photoreceptors and Mechanisms of Retinal Degeneration

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

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

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

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

### Public Service

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

Grant Reviewer, National Institutes of Health: The Biology and Diseases of the Posterior Eye (BDPE) Study Section

Reviewer, Howard Hughes Medical Institute (HHMI) investigators

Reviewer for many scientific journals

### Research Grants

California Institute for Regenerative Medicine: Development of a Stem Cell-Based Transplantation Strategy for Treating Age-Related Macular Degeneration (Principal Investigator, with other investigators), 11/1/09–10/31/12

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

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



# Federico G. Velez, MD

Assistant Clinical Professor of Ophthalmology

Member of the Jules Stein Eye Institute

## RESEARCH SUMMARY

### Strabismus and Childhood Eye Disorders

Dr. Velez's primary research interest is studying the mechanisms of congenital and acquired forms of strabismus. He has participated in the development of guidelines for preoperative assessment and surgical approaches to patients with convergent (esotropia), divergent (exotropia), and vertical forms of strabismus, and has developed new techniques to treat pediatric patients with eyelid abnormalities and cataracts. Dr. Velez has recently completed studies that apply bioengineering technology to the correction of ocular motility disorders. He has also identified a new ocular motility disorder in patients with the human immunodeficiency virus.

## Public Service

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

Editorial Board Member: *Journal of the American Association of Pediatric Ophthalmology and Strabismus*; *Journal of the Colombian Society of Ophthalmology*; and *Video Journal of Ophthalmology*

Reviewer, *Archives of Ophthalmology* and *British Journal of Ophthalmology*

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

## Research Grants

Gerald Oppenheimer Family Foundation Center for the Prevention of Eye Disease: Development of an Electrical-Stimulation Device to Prevent Strabismic Amblyopia, 1/1/10–12/31/10

Jules Stein Eye Institute: Ocular Motility Disorders in Patients Infected with the Human Immunodeficiency Virus, 6/1/11–5/31/12



# Barry A. Weissman, OD, PhD

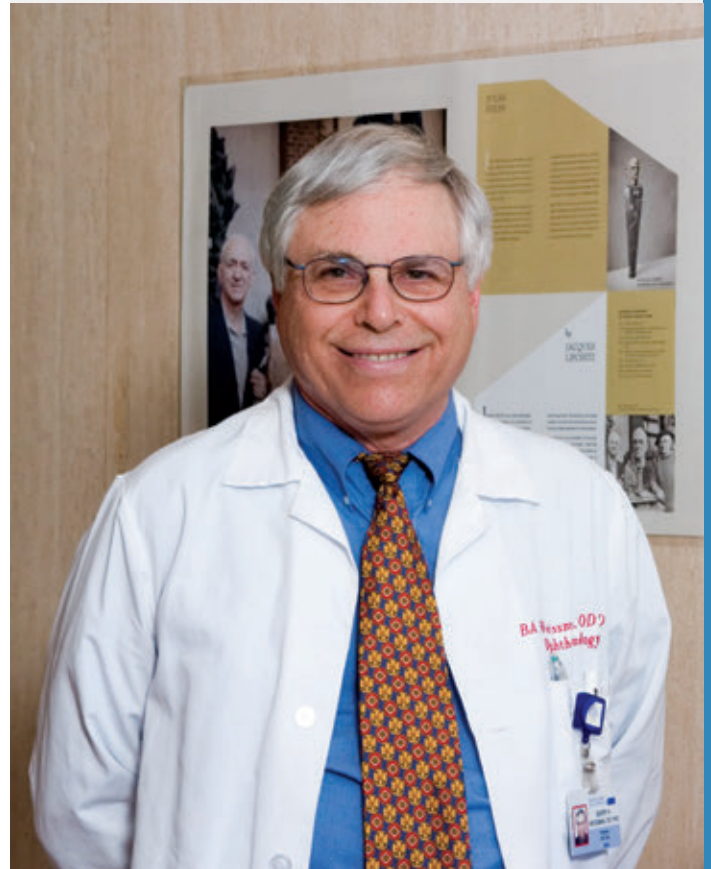
Professor of Ophthalmology

Member of the Jules Stein Eye Institute

## RESEARCH SUMMARY

### Corneal Contact Lenses and Corneal Oxygen Transport

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



### Public Service

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

Board of Trustees Member, California Optometric Association

### Honors

Alumnus of the Year, University of California, Berkeley, School of Optometry

## David S. Williams, PhD

Jules and Doris Stein Research to Prevent Blindness  
Professor of Ophthalmology

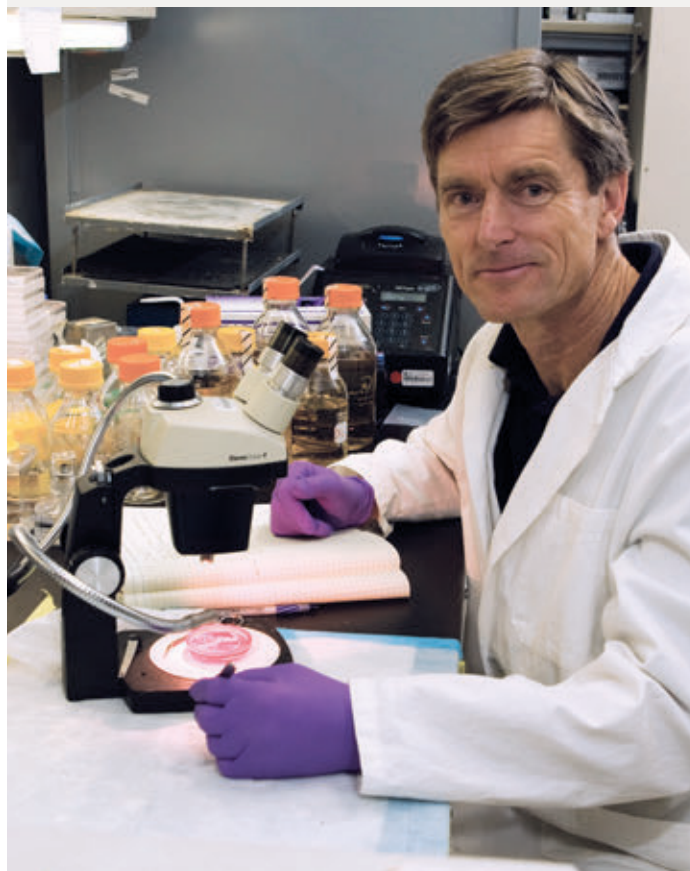
Professor of Neurobiology

Member of the Jules Stein Eye Institute

### RESEARCH SUMMARY

#### Cell Biology of the Retina and Inherited Retinal Disease

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



#### Public Service

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

Scientific Advisory Board Member,  
Foundation Fighting Blindness

Executive Board Member, Sustainability Council of  
New Zealand

Committee Member, ARVO/International Society for  
Ocular Cell Biology

Associate Editor, *Visual Neuroscience*

Consultant, Cellular, Tissue, and Gene Therapies  
Advisory Committee, U.S. Food and Drug Administration

#### Research Grants

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

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

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

California Institute for Regenerative Medicine: Development  
of a Stem Cell-Based Transplantation Strategy for Treating  
Age-Related Macular Degeneration (Principal Investigator:  
Gabriel H. Travis, MD, with other investigators),  
11/1/09–10/31/12

# Xian-Jie Yang, PhD

Professor of Ophthalmology

Member of the Jules Stein Eye Institute

## RESEARCH SUMMARY

### Development and Disease Therapy of the Retina

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

## Public Service

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

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

Editorial Board Member, *Visual Neuroscience*

Ad hoc Academic Editor, *PLoS Biology*

Reviewer for many scientific journals

## Research Grants

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

California Institute for Regenerative Medicine: Development of a Stem Cell-Based Transplantation Strategy for Treating Age-Related Macular Degeneration (Principal Investigator: Gabriel H. Travis, MD, with other investigators), 11/1/09–10/31/12



## INSTITUTE MEMBERS BASED AT OTHER SITES

### James W. Bisley, PhD

Assistant Professor of Neurobiology and Psychology

Member of the Jules Stein Eye Institute

Member of the Brain Research Institute

#### RESEARCH SUMMARY

### Cognitive Processing of Visual Information

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

### Nicholas C. Brecha, PhD

Professor of Neurobiology and Medicine

Vice Chair of the Department of Neurobiology

Member of the Jules Stein Eye Institute

Member of the Brain Research Institute

Member of CURE: Center for Digestive Diseases

#### RESEARCH SUMMARY

### Functional and Structural Organization of the Mammalian Retina

Dr. Brecha's research focuses on the elucidation of the structural organization of the outer and inner retina for understanding visual information processing by the retina. Morphological studies have defined cell types and classes, and microcircuitry organization in the retina, and neurochemical studies have investigated the action of neurotransmitters and neuroactive peptides in retinal microcircuits. Experimental work has clarified the functional role of neuropeptides in the inner retina and supports the current hypothesis that certain neuropeptides are modulators of retinal neurons and circuitry that influence light and dark adaptation; they also influence retinal circuitry that mediates form vision. Other experimental work has investigated the photoreceptor synaptic triad, a specialized synaptic complex that is the site of initial transfer of visual information from photoreceptors and is critically important for visual processing. Experimental studies are testing the idea

that a vesicular mechanism underlies transmitter release from horizontal cells in this triad to mediate feedback and feed forward signaling, which is critically important for the formation of visual receptive fields. These investigations are fundamental steps in establishing the retina's functional organization and provide the basis for understanding the pathophysiology of retinal dysfunction.

### Patrick T. Dowling, MD, MPH

Chairman of the UCLA Department of Family Medicine

Kaiser Permanente Endowed Professor of Community Medicine

Member of the Jules Stein Eye Institute

### Health Care Policy and Access for Underserved Populations

Dr. Dowling is a member of the California Community Foundation's Board of Directors and the Board of Trustees at the Charles Drew University of Medicine and Science. He has received numerous grants for international medical graduate training, residency training and family medicine training. He has made unparalleled contributions to the community and to the training of physicians to support the community at a primary level. He is a prior Commissioner of Public Health for the Los Angeles County Department of Health and currently has funding for an innovative program to increase the number of Hispanic physicians in California. Dr. Dowling worked closely with Dr. Anne Coleman on the Remote Area Medical Program, which provided care to the homeless and indigent in the Los Angeles community. Dr. Dowling's presence as a Member of the Jules Stein Eye Institute adds a new dimension that is being developed and pioneered by Dr. Coleman at the Institute's Center for Eye Epidemiology.

### Antoni Ribas, MD

Associate Professor of Hematology and Oncology

Member of the Jules Stein Eye Institute

#### RESEARCH SUMMARY

### The Immune System in the Treatment of Cancer

Dr. Antoni Ribas' research is aimed at understanding how the immune system can be effectively used to treat cancer. His work is focused on the ability to activate killer immune lymphocytes specifically targeted to the cancer. A specialized white blood cell, the dendritic cell, can be grown in the laboratory and used to



activate tumor-specific lymphocytes. Dr. Ribas and his colleagues have conducted studies demonstrating that dendritic cells could be genetically engineered to induce powerful responses against cancer. They have taken this approach from preclinical studies in the laboratory and in mice to the treatment of patients with malignant melanoma and hepatocellular carcinoma. Additional interests of the laboratory are the use of interventions that modify the regulation of tumor-specific lymphocytes and the modulation of the interaction of the killer immune cells with the cancer cells, with the goal of further increasing their antitumor potential.

## Dario L. Ringach, PhD

Professor of Neurobiology and Psychology,  
Biomedical Engineering Program

Member of the Jules Stein Eye Institute

### RESEARCH SUMMARY

#### Visual Perception, Eye Movement, and Sensorimotor Integration

Dr. Ringach's research focuses on the relationship between eye movements and visual perception, as well as how motor planning and execution, such as reaching, grasping, navigating, and adjusting body posture, is influenced by visual information. Using virtual reality environments, he and his colleagues are studying how human subjects interact with visual stimuli that can be controlled in real time depending on the individual's eye, head, and limb movements. They are examining how visual feedback is used to guide motor actions as well as how the brain adapts to novel situations, such as simulated increases in the total feedback delay.

## Guido A. Zampighi, PhD

Professor of Neurobiology

Member of the Jules Stein Eye Institute

### RESEARCH SUMMARY

#### Intercellular Junctions and Communication

A fundamental property of cells organized in tissues is their ability to communicate with each other via highly specialized areas of plasma membrane contact, called junctions. Dr. Zampighi is studying the gap junction and the chemical synapse, two specialized junctions that mediate electrical and chemical transmission, respectively. The gap junction is composed of specialized channels containing small hydrophilic pores that span the two plasma membranes and the intervening

extracellular space (the cell-to-cell channel). He is investigating the high-resolution structure of the channels as well as the mechanisms of assembly, insertion, and retrieval of the connexin proteins that form them. The chemical synapse is composed of a presynaptic neuron filled with small diameter vesicles that contain a high concentration of neurotransmitters and a postsynaptic neuron with receptors. He is studying the mechanisms by which the synaptic vesicles attach ("dock") to the presynaptic membrane. He uses structural (electron microscopy), biochemical, and electrophysiological techniques in an attempt to identify, purify, and characterize the channels and transporters of both junctions in an effort to increase understanding of the mechanisms mediating cell communication.

## PROFESSIONAL RESEARCH SERIES

## Novruz Ahmedli, PhD

Associate Research Ophthalmologist

### RESEARCH SUMMARY

#### Müller Cell Morphology

Zbed4 is a multifunctional protein that plays a key role in the cells where it is expressed. Dr. Ahmedli's results indicate that this important protein appears early in embryonic life; however, in adult mouse retinas, it is detectable only in Müller cells. In addition, he has found that the length and shape of Müller cell processes depend on the levels of Zbed4. Dr. Ahmedli's work aims to identify the pathway, which is essential for proper functioning of Zbed4 in Müller cells.

## Christian Altenbach, PhD

Research Ophthalmologist

### RESEARCH SUMMARY

#### Structure and Function of Rhodopsin

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

## Barry L. Burgess, BS

Research Specialist IV

### RESEARCH SUMMARY

#### Ocular Melanoma Molecular Genetics

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

## Yekaterina Gribanova, MD

Assistant Research Specialist III

### RESEARCH SUMMARY

#### Characterization of Novel Retinal Protein 7R

A novel retinal protein, 7R, has been linked to autosomal recessive retinitis pigmentosa, a disease leading to incurable blindness. Dr. Gribanova is using immunohistochemical analysis, *in situ* proximity ligation assay, co-immunoprecipitation, immunoelectron cryo-microscopy, and gradient flotation fractionation combined with solid-phase immunoabsorption to determine and characterize 7R function in photoreceptor cells. These methods identify R7 interacting partners and suggest that 7R might contribute to sorting and transport of transduction proteins in photoreceptor cells.

## 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 extremely important because it is over-expressed in many neurological diseases.

## Joanna J. Kaylor, PhD

Assistant Research Ophthalmologist

### RESEARCH SUMMARY

#### Characterization and Identification of the Enzymes of the Cone Visual Cycle

Bright light vision is solely mediated by the cone photoreceptor cells of the retina. Recent biochemical evidence supports the existence of a new metabolic pathway in the retina for the regeneration of cone opsin visual pigment. Dr. Kaylor is using biochemistry and molecular biology techniques to characterize and identify the enzymes responsible. Her work has led to the identification of the first vitamin A retinol isomerase, Desaturase 1. Understanding the role of Desaturase 1 in vision is the current focus of her research.

## Jacky M.K. Kwong, PhD

Associate Research Ophthalmologist

### RESEARCH SUMMARY

#### Degeneration of Retinal Ganglion Cells and Neuroprotection

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

## Anna Matynia, PhD

Assistant Research Ophthalmologist

### RESEARCH SUMMARY

#### Neural and Molecular Basis of Light-Associated Allodynia

Dr. Matynia is investigating the mechanisms of light-associated allodynia (LAA), a condition in which normal levels of light produce ocular pain. Using a combination of behavioral, molecular, and cellular approaches in

genetic mouse models, the goal is to identify the site of light-pain association and determine how and where the pain signal is propagated. The research findings will form the basis of treatment strategies for this condition.

## Michael D. Olson, OD, PhD

Associate Research Ophthalmologist

### RESEARCH SUMMARY

#### Comprehensive Ophthalmology

Dr. Olson's research activities focus on the visual and surgical outcomes following cataract surgery. This includes the surgical correction of refractive errors, evaluating the safety and efficacy of specialty use ocular implants, and functional visual outcomes following ocular trauma cases and complicated cataract surgery. He is currently investigating three iris implants: the Human Optic Artificial Iris, which is a customized, handmade color match of the patient's fellow eye; Morcher GmbH aniridia implants; and the Ophtec Reconstruction Lens for the treatment of eyes with congenital aniridia, acquired iris defects, or complete aniridia. He is also investigating a unique intraocular lens whose power can be modified after implantation, correcting the residual refractive error, both spherical and astigmatic, to improve uncorrected visual acuity.

## Maria Carolina Ortube, MD

Assistant Research Ophthalmologist

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

### RESEARCH SUMMARY

#### Ocular Genetics

Dr. Ortube is a fellowship-trained specialist in pediatric ophthalmology, strabismus, and pediatric genetic conditions. She is an investigator in four clinical and translational research projects related to ocular genetics. The Genetics of Age-Related Maculopathy study focuses on the genetic and environmental risk factors that contribute to age-related maculopathy. The genetics of inherited eye disorders and Stargardt protocols provide clinical characterization of affected individuals and at-risk family members. The protocols use state-of-the-art imaging and functional technologies in conjunction with molecular genetic testing to identify causative genes and mutations. Dr. Ortube has a special interest in children born with craniofacial ocular disorders. She is also investigating a simple, noninvasive, rapid method for widespread screening of diabetics using the

pupillary light reflex. This study aims to identify those who may require medical attention and/or therapy for diabetic retinopathy. Dr. Ortube is a co-investigator in collaborative research efforts with the University of Pittsburgh and Neurokinetics, Inc.

## Roxana A. Radu, MD

Associate Research Ophthalmologist

### RESEARCH SUMMARY

#### Retinoids Metabolism in the Eye and Underlying Mechanisms of Macular Degeneration

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

## Kiyo Sakagami, PhD

Assistant Research Ophthalmologist

### RESEARCH SUMMARY

#### Hedgehog Signaling and PTEN/PI3K Signaling on Retinal Development

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

## Ned Van Eps, PhD

Assistant Research Ophthalmologist

### RESEARCH SUMMARY

#### The Molecular Mechanism of Transducin Activation

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

## Quan Yuan, PhD

Assistant Research Ophthalmologist

### RESEARCH SUMMARY

#### Biochemistry of Visual Cycle and Retinal Degeneration

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

## PROFESSIONAL CLINICAL SERIES

## John D. Bartlett, MD

Assistant Clinical Professor of Ophthalmology

Clinical Director, University Ophthalmology Associates

### Cataract Surgery

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

## Laura Bonelli, MD

Clinical Instructor of Ophthalmology

### RESEARCH SUMMARY

#### Neuro-Ophthalmology and Comprehensive Ophthalmology

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

## Melissa W. Chun, OD

Associate Clinical Professor of Ophthalmology

Director of the UCLA Vision Rehabilitation Center

### RESEARCH SUMMARY

#### Vision Rehabilitation

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

## Catherine J. Hwang, MD, MPH

Associate Physician Diplomate

### RESEARCH SUMMARY

#### Thyroid Eye Disease, Ocular Surface Disease, Eyelid Disorders

Dr. Hwang's research includes studies involving thyroid eye disease (Graves disease), ocular surface disease, and eyelid disorders such as blepharospasm. At the Jules Stein Eye Institute, Dr. Hwang has a dedicated thyroid eye disease clinic and is starting a blepharospasm clinic in order to better educate patients, form support groups, and aid in clinical studies. In addition, Dr. Hwang collaborates with researchers from other departments, such as interventional radiology and head and neck surgery, on various projects.

## Susan S. Ransome, MD

Clinical Instructor of Ophthalmology

### RESEARCH SUMMARY

#### Cytomegalovirus Retinitis

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

## Meryl L. Shapiro-Tuchin, MD

Assistant Clinical Professor of Ophthalmology

Director of the Ophthalmology Inpatient Consultation Service

#### Comprehensive Ophthalmology

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

## EMERITUS FACULTY

### Leonard Apt, MD

Professor of Ophthalmology Emeritus (Active Recall)

Founding Chief of the Division of Pediatric Ophthalmology and Strabismus

Member of the Jules Stein Eye Institute

### Michael O. Hall, PhD

Professor of Ophthalmology Emeritus (Active Recall)

Founding Member of the Jules Stein Eye Institute

### Robert S. Hepler, MD

Professor of Ophthalmology Emeritus (Active Recall)

Founding Chief of the Neuro-Ophthalmology Division

Member of the Jules Stein Eye Institute

### Bradley R. Straatsma, MD, JD

Professor of Ophthalmology Emeritus (Active Recall)

Founding Chairman of the Department of Ophthalmology

Founding Director of the Jules Stein Eye Institute

### Marc O. Yoshizumi, MD

Professor of Ophthalmology Emeritus

Member of the Jules Stein Eye Institute

### Richard W. Young, PhD

Professor of Neurobiology Emeritus

Member of the Jules Stein Eye Institute

## LECTURERS

### Kathleen L. Boldy, VMD

Lecturer in Ophthalmology



# Programs

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# Patient Care Services

The Institute’s program of care for patients encompasses the full range of eye diseases. Nationally and internationally renowned faculty, along with highly skilled clinical fellows and physician residents, provide integrated consultation and treatment, including new diagnostic and therapeutic procedures that have been made available through recent scientific advances. Institute ophthalmologists are supported by optometrists, orthoptists, technicians, and nurses. Care is delivered in distinctive subspecialty treatment centers, service areas, and clinical laboratories, as well as in specially equipped ophthalmic surgical suites and a dedicated inpatient unit.

## Faculty Consultation Service

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

## University Ophthalmology Associates

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

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

## Inpatient Services

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

## Surgical Services

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

## UCLA Mobile Eye Clinic

The UCLA Mobile Eye Clinic, a 39-foot-long bus specially outfitted with eye examination equipment, is supported by charitable contributions to the Jules Stein Eye Institute. The Mobile Eye Clinic’s staff of trained ophthalmic personnel, led by **Dr. Anne L. Coleman**, provides general eye care to over 4,000 underserved adults and children annually throughout Southern California. Services include ophthalmic examination and refraction, diagnosis of potential or existing eye disorders, treatment of some ocular diseases, and appropriate referral of patients who need additional care.

### Summary of Patient Care Statistics

	2009–2010	2010–2011
<b>Faculty Consultation Service</b>		
Patient visits	65,910	72,223
<b>University Ophthalmology Associates</b>		
Patient visits	19,336	23,453
<b>Inpatient Consultation Service</b>		
Patient evaluations	348	283
<b>Clinical Laboratories</b>		
Procedures	26,823	32,956
<b>Surgery Services</b>		
Number of procedures	9,429	9,413
<b>Mobile Eye Clinic</b>		
Number of patients seen	4,131	4,969
Ocular abnormalities	46%	38%
Number of trips	181	177



# Research and Treatment Centers

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

## Aesthetic Center

The Aesthetic Center, under the direction of **Dr. Robert Alan Goldberg**, provides services to patients who are interested in enhancing their appearance through aesthetic surgery. **Drs. Catherine J. Hwang** and **Mehryar (Ray) Taban** also see patients. Established in 1998, the Center has earned a reputation for high-quality, individualized care delivered by surgeons trained in both ophthalmic and plastic surgery.

Surgical services include upper and lower eyelid blepharoplasty, endoscopic forehead lifting, endoscopic midface surgery, lifting of the neck and face, liposuction, fat transfer, sclerotherapy, and dermal filler and other cosmetic injections to smooth facial lines. Minimal incision approaches are utilized to provide the optimal aesthetic result. A major goal of the Center is to conduct research focused on improving understanding of skin processes, such as aging and healing, and on developing new techniques and substances for aesthetic surgery. Center physicians have pioneered surgical techniques to enhance the normal function and appearance of the eyes and face, and often receive referrals for complex plastic surgery cases.

## UCLA Center for Eye Epidemiology

The UCLA Center for Eye Epidemiology, under the direction of **Dr. Anne L. Coleman**, was established in 1998 to promote interdisciplinary investigations into blinding diseases of public health importance. It is supported by private donations including an endowment established by The Ahmanson Foundation. The Center maintains and improves vision health through public health research and intervention, and serves as a coordinating body for expanding and sharing information.

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

## Center to Prevent Childhood Blindness

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

Center members are developing a new noninvasive method of measuring blood gases from the surface of the eye, which may be critical in preventing retinopathy of prematurity, a leading cause of blindness in premature newborns. In another avenue of research, the Center developed a very inexpensive antiseptic solution to treat pediatric corneal infections in underdeveloped areas, and completed a study showing its effectiveness in treating corneal ulcers that now blind more than 400,000 children worldwide. A second study which evaluated the solution's effectiveness in treating fungal corneal infections, a major cause of pediatric blindness in tropical countries, is now undergoing statistical evaluation.



Dr. Gary Holland, Director of the Ocular Inflammatory Disease Center, examines a patient.

## 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, Michael B. Gorin, Ralph D. Levinson, and Steven D. Schwartz**. Established in 1998, the Center provides core support to faculty members conducting patient-based research studies. This support involves vital, behind-the-scenes activities that facilitate the clinical research process. Center staff liaise with grant agencies and government regulatory bodies, assist with the preparation of grant applications, participate in the design and management of clinical studies, and perform data collection and analysis functions.

Institute faculty members are currently conducting approximately 70 clinical research studies (listed in the Appendices). Patients can volunteer to participate in studies that contribute to a better understanding of ocular disorders or that evaluate new, potentially better treatments for various diseases of the eye.

## Contact Lens Center

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

The Center is one of several across the nation that participated in the landmark CLEK (Collaborative Longitudinal Evaluation of Keratoconus) Study sponsored by the National Eye Institute. Other research

conducted by faculty at the Center includes contact lens wear complications, such as neovascularization, abrasion and corneal infection; and systems of oxygen supply to the corneas of contact lens wearers.

## Diabetic Eye Disease and Retinal Vascular Center

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

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

## Eye Trauma and Emergency Center

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

Patients are commonly referred to the Center for such ocular traumas as ruptured globe, intraocular foreign bodies, acute orbital hypertension, retinal detachment, chemical burns of the cornea and conjunctiva, and acute vitreous hemorrhage. The Center offers complete evaluation and treatment of the traumatically injured eye, including vitreoretinal and/or orbital and ophthalmic plastic surgery, anterior segment surgery, and medical follow up. Primary surgical repairs are performed immediately for new trauma while secondary repairs are usually scheduled.

## Gerald Oppenheimer Family Foundation Center for the Prevention of Eye Disease

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

## UCLA Laser Refractive Center

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

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

## Macular Disease Center

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

Patients with the atrophic or dry form of macular disease are evaluated and their cases followed at the Macular Disease Center in conjunction with services offered by the Vision Rehabilitation Center. Patients with the exudative or wet form of macular disease receive an immediate angiogram to identify lesions. Treatment options for wet macular disease include participation in emerging therapies and clinical studies that are matched to the patient's disease status. A patient coordinator is available to answer questions and provide information on an ongoing basis.

## Ocular Inflammatory Disease Center

The Ocular Inflammatory Disease Center, under the direction of **Dr. Gary N. Holland**, was established in 1985 to provide patients with coordinated multi-specialty care for a broad spectrum of inflammatory eye disorders including uveitis, corneal ulcers, endophthalmitis, autoimmune diseases of the cornea and ocular surface, and ophthalmic manifestations of AIDS. The Center has a long history of participating in clinical studies and drug therapy investigations that have furthered the understanding and treatment of these diseases. The Center also promotes interdisciplinary research and education related to inflammation of the eyes.

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

## Ophthalmic Oncology Center

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

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

## Optic Neuropathy Center

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

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

## Orbital Disease Center

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

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



Dr. Tara A. McCannel, Director of the Ophthalmic Oncology Center, discusses ocular melanoma at a forum held at the Institute's Research to Prevent Blindness Auditorium in March 2011.

## Vision Genetics Center

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

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

## Vision Rehabilitation Center

The Vision Rehabilitation Center is under the direction of **Dr. Melissa W. Chun**, with **Dr. Steven D. Schwartz** as Medical Advisor. The Center was established to provide rehabilitation to maximize visual function and quality of life of patients with low vision, defined as best corrected vision of 20/70 or worse in the better eye.

The Center provides assistance in the form of patient consultation and training, including reading and computer training, as well as evaluation on a wide array of technologically advanced devices that can help patients adapt to their visual restrictions. Customized for each patient's individual needs, Center services may include instruction on simple techniques that optimize lighting and contrast or on sophisticated devices like a computer system that scans written materials and reads it back in a synthesized voice. One unique feature of the Center is a special "lending library" of select 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 enlarging the parameters employed to assess the clinical course and effectiveness of treatment. Additionally, the clinical laboratories expand the scope of treatment alternatives, promote clinical research, and generally augment the effectiveness of ophthalmic disease management. The laboratories are available to all ophthalmologists in the community.

### Corneal Diagnostic Laboratory

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

## Glaucoma Photography Laboratory

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

## Ocular Motility Clinical and Basic Science Laboratory

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

## Ophthalmic Photography Clinical Laboratory

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

## Ophthalmic Ultrasonography Clinical Laboratory

The Ophthalmic Ultrasonography Clinical Laboratory, directed by **Drs. Ralph D. Levinson** and **Steven D. Schwartz**, performs clinical examinations that are useful in diagnosing both ocular and orbital eye diseases. Diagnostic examinations include standardized A-scan, B-scan, and biomicroscopy. Standardized A-scan is useful in tissue differentiation and is commonly employed to diagnose ocular and orbital tumors, including choroidal melanoma. B-scan provides location and contour information and is particularly useful in differentiating vitreous membranes from retinal detachment. Ultrasound biomicroscopy provides exquisitely detailed, high-resolution views of the anterior segment of the eye and is a critical tool for the evaluation of ocular pathology, especially in opaque corneas. Biometry and lens calculation examinations are also performed in the Laboratory. Biometry measures the axial eye length, anterior chamber depth, and lens thickness; lens calculations are performed to determine the power of the lens implant for cataract patients.



The Ocular Motility Laboratory engages in basic science research to further understanding of eye movement and diseases of the eye, brain, and muscles, and related tissues of the inner ear.

## Perimetry Laboratory

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

## Visual Physiology Clinical Laboratory

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

From left, graduating residents Drs. Amelia Sheh, Jennifer Huang, R. Duncan Johnson, Darin Goldman, Louis Savar, Vicky Pai, and Annie Lim



## Training Programs

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

### UCLA Medical Student Program

Each academic year, the Department of Ophthalmology and the Institute extend instruction to UCLA medical students in their second, third, and fourth years of enrollment. Through lectures, demonstrations, discussions, and clinical practice, the students have numerous training opportunities from which to gain knowledge and experience in ophthalmology.

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

## Medical Student Research Program

At the Jules Stein Eye Institute, medical students have taken clinical and laboratory research electives for decades; however, there has been no formal program wherein a medical student could obtain salary and research support. The Medical Student Research Program allows select medical students to familiarize themselves with laboratory or clinical vision science research, in the hopes that this will enhance their desire to undertake a career in ophthalmology, with a focus on academic ophthalmology. Each year, a committee selects two medical student researchers to receive salary and research support for 6–12 months in the laboratory or clinical research area of the student's mentor. The goal of the program is to encourage medical students to pursue careers in academic ophthalmology.

## UCLA Ophthalmology Residency Program

The Department of Ophthalmology conducts an accredited three-year residency program for 24 residents; eight new residents begin training each July. The full breadth of ophthalmology training is offered, including experience in general ophthalmology and ophthalmic subspecialties. Training incorporates the resources of the UCLA 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, and walk-in patients. They also serve as an ophthalmology consult service for inpatients in the UCLA Medical Center. Residents assigned to subspecialty service rotations are provided with intensive exposure to the various divisions within the Department, working closely with faculty members in a private practice environment. At the UCLA-affiliated medical centers, residents work in teams that provide both general and subspecialty patient care.

## Didactic Education

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

## Surgery Training

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

## Research

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



## EyeSTAR Program

The EyeSTAR (Specialty Training and Advanced Research) Program offers vision science training combined with an ophthalmology residency. Appointees complete a residency program leading to certification in ophthalmology, as well as laboratory research experience leading to a doctorate or postdoctoral training in the event that the trainee has a doctorate. EyeSTAR trainees work under the guidance of a faculty advisory panel representing the trainee's clinical and research interests.

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

## UCLA Ophthalmology and Vision Science Fellowship Programs

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

Clinical fellowship training combines outpatient, inpatient, and surgical experience in an ophthalmic subspecialty. The fellow assumes increasing responsibility for patient care under the supervision of faculty members responsible for the program. In addition to receiving instruction from faculty, the fellow instructs medical students and residents. Research is considered an important aspect of specialty training and a major prerequisite for assimilating future developments in ophthalmology. Clinical fellows are expected to undertake independent investigation or to participate in one of the ongoing research projects in a basic or clinical field related to their specialty.

Vision science fellowship training is laboratory-based and offers both predoctoral and postdoctoral opportunities to trainees in specific areas of vision science, or over a wide range of topics. Trainees work under the supervision of Institute faculty members who are engaged in basic science research and have active laboratories. They may work on individual projects or contribute to faculty projects. The scope and nature of each vision science fellowship is developed by the trainee and his/her faculty mentor.

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

### Fellowship in Comprehensive Ophthalmology

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

### Fellowship in Contact Lens Practice

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

## Fellowship in Cornea–External Ocular Diseases and Refractive Surgery

Under the direction of **Drs. Anthony J. Aldave, Bartly J. Mondino, Gary N. Holland, Sophie X. Deng, Barry A. Weissman, and David Rex Hamilton**, one-year fellowships are offered in the study of diseases of the cornea, external eye, anterior segment, and refractive surgery. Clinical experience consists of participation in the cornea faculty practices, including surgery, and in the care of emergency cornea cases at the Jules Stein Eye Institute. Fellows work in the microsurgical laboratory, and assist in teaching microsurgical skills to ophthalmology residents. Under the direction of faculty, they also perform primary surgical procedures in the UCLA Laser Refractive Center. In addition to in-depth training at the Institute, fellows supervise patient care in the cornea clinics at the West Los Angeles Veterans Affairs Healthcare Center. Experience and knowledge concerning contact lens fitting, contact lens management, and related aspects of corneal physiology are also obtained. Fellows typically complete an original clinical or laboratory research project, and frequently co-author a book chapter or review during their training.

## Fellowship in Glaucoma

Under the direction of **Drs. Joseph Caprioli, Anne L. Coleman, JoAnn A. Giaconi, Simon K. Law, and Kouros Nouri-Mahdavi**, the one- or two-year glaucoma fellowship provides clinical and laboratory experience in glaucoma diagnosis and management. Clinical experience is gained by examining patients in the consultation suite and participating in their clinical and surgical management. Fellows work in the glaucoma microsurgical laboratory, participate in microsurgery courses, assist in the glaucoma clinic, and develop expertise in the various diagnostic techniques used in glaucoma treatment through preceptor-type relationships with faculty. They participate in glaucoma teaching at the Jules Stein Eye Institute and affiliated institutions, present cases at teaching rounds, and prepare presentations for regularly scheduled glaucoma conferences. Fellows also undertake at least one research project, which may be a clinical study or an applied research project in the laboratory, in cooperation with the faculty advisor.



Vision Science Fellows are supervised by Institute faculty members who are engaged in basic science research and have active laboratories.

## Fellowship in Neuro-Ophthalmology

The one-year fellowship in neuro-ophthalmology, under the direction of **Dr. Anthony C. Arnold**, involves a close preceptor-preceptee relationship, participation in teaching rounds, and work in the private consultation suite. The David Geffen School of Medicine at UCLA maintains major clinical and research programs in neurology, neurosurgery, and neuroradiology. Fellows attend the weekly Neurology and Neurosurgery Grand Rounds, take an active part in seeing relevant inpatient consultations throughout the medical center, and assist in selected surgical procedures of interest to neuro-ophthalmologists. Attendance at the weekly neuro-radiology teaching conferences is encouraged. Time is allotted for scientific reading and for research activities. Participation in clinical research, such as studies of eye movement disorders and disturbances of visual pathways, is expected.

## Fellowship in Ophthalmic Pathology

Under the direction of **Dr. Ben J. Glasgow**, this fellowship provides preparation for an academic career in ophthalmic pathology. One-, two-, and three-year training programs are available depending on the background of the applicant. Training encompasses many aspects of ophthalmic pathology. Fellows may choose between a research or clinical based curriculum. Clinical fellows gain expertise in surgical pathology; autopsy pathology; cytology, including fine-needle aspiration; electron microscopy; immunohistochemistry; DNA in situ hybridization; Southern blot analysis; and polymerase chain reaction techniques for diagnostic work. The fellowship programs are individualized according to the credentials and capabilities of each fellow.

### Fellowship in Orbital and Ophthalmic Plastic Surgery

Fellowships in orbital and ophthalmic plastic surgery, under the overall supervision of **Drs. Henry I. Baylis, Robert Alan Goldberg, Jonathan Hoening, and Norman Shorr**, provide training for ophthalmologists who are interested in specializing in orbital and adnexal disorders, and in aesthetic and reconstructive orbitofacial surgery. The fellowship program is approved by the American Society of Ophthalmic Plastic and Reconstructive Surgery and the American Academy of Cosmetic Surgery. Fellows participate in orbital and ophthalmic plastic surgery outpatient consultation, inpatient care, and surgical procedures at the Jules Stein Eye Institute and affiliated hospitals. They also participate extensively in the continuing education and research activities of the Orbital and Ophthalmic Plastic Surgery Division. In addition to publishing results of original research in peer-reviewed scientific journals, fellows complete a formal thesis that partially satisfies the membership requirements of the American Society of Ophthalmic Plastic and Reconstructive Surgery. One to two international fellows also participate in the program annually.

### Fellowship in Pediatric Ophthalmology and Strabismus

The division of Pediatric Ophthalmology and Strabismus offers one-year fellowships, under the directorship of **Drs. Sherwin J. Isenberg and Joseph L. Demer**. Clinical experience consists of supervised participation in the ophthalmic care of pediatric patients seen at the Jules Stein Eye Institute, Harbor-UCLA Medical Center, and Olive View-UCLA Medical Center. Specific activities include participation in University Ophthalmology Associates, the nursery and neonatal intensive care units, ophthalmic plastic and reconstructive surgery, and the pediatric retinal service. Other activities in pediatric ophthalmology include experience in the private consultation suites and participation in pediatric cases that are handled through other services. Fellows may collaborate with vision scientists, including biochemists, physiologists, pathologists, and anatomists, on research projects of mutual interest.

### Fellowship in Uveitis and Inflammatory Eye Diseases

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

### Fellowship in Vitreoretinal Diseases and Surgery

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

## Fellowships in Vision Science

Predoctoral and postdoctoral fellowships in vision science are offered to individuals who have an interest in specific research areas being pursued by Institute faculty in highly specialized laboratory environments. These fellowships are supported either by individual funds available to Institute professors or as part of a special program offered under the auspices of a **National Eye Institute Vision Science Training Grant** and directed by **Dr. Gabriel H. Travis**.

Predoctoral fellows take a defined program of core courses and carry out eye-related research, obtaining doctorates in about six years. Fellows are required to present their research at informal and formal seminars, and are encouraged to participate in national and international meetings and publish scientific papers. They gain a broad background in the vision sciences by interacting with members of adjacent laboratories and collaborating with faculty members other than their own preceptors. Postdoctoral research fellowships are offered for one to three years. Each one is unique with research programs established according to mutual agreement between trainees and mentors. Research areas for postdoctoral fellows include molecular biology, genetics, biophysics, biomechanics, cell biology, eye development, and biochemistry. Upon completion of their fellowships, trainees usually pursue careers in academia or industry.

## International Fellowship and Exchange Program

To promote and encourage research and education interaction with ophthalmology institutions throughout the world, the Jules Stein Eye Institute offers an International Ophthalmology Fellowship and Exchange Program consisting of one- to two-year fellowships under the supervision of specific Institute faculty. Candidates for these fellowships are nominated by prestigious institutions outside the United States, and often hold academic positions within their own countries. Fellows participate in the clinical and research activities of ophthalmic subspecialties according to their training needs.



International fellow Dr. Siamak Zarei-Ghanavati (right) confers with Dr. Anthony Aldave.



# Volunteer and Consulting Faculty

## Volunteer Faculty in Ophthalmology

### Clinical Professor of Ophthalmology

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

Bruce B. Becker, MD  
Michael S. Berlin, MD  
Norman E. Byer, MD  
William P. Chen, MD  
Glenn O. Dayton, MD  
Paul D. Deiter, MD  
Donald E. Dickerson, MD  
Richard Elander, MD  
Leland M. Garrison, MD  
John D. Hofbauer, MD  
Kenneth J. Hoffer, MD  
C. Richard Hulquist, MD  
Barry M. Kerman, MD  
Roger A. Kohn, MD  
Howard R. Krauss, MD  
Benjamin C. Kwan, MD  
Jeremy E. Levenson, MD  
Ezra Maguen, MD  
Robert K. Maloney, MD  
Samuel Masket, MD  
Albert T. Milauskas, MD  
Leon G. Partamian, MD  
Irvin S. Pilger, MD  
George B. Primbs, MD  
Yaron S. Rabinowitz, MD  
Teresa O. Rosales, MD  
Robert J. Schechter, MD  
Stephen S. Seiff, MD  
Alan L. Shabo, MD  
Norman Shorr, MD  
Robert M. Sinsky, MD  
Roger W. Sorenson, MD  
Howard H. Stone, MD

## Associate Clinical Professor of Ophthalmology

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

## Assistant Clinical Professor of Ophthalmology

David H. Aizuss, MD  
Malvin B. Anders, MD  
Richard K. Apt, MD  
Arthur A. Astorino, MD  
John D. Bartlett, MD  
Mark A. Baskin, MD  
J. Kevin Belville, MD  
Arthur Benjamin, MD  
Katherine L. Bergwerk, MD  
Betsy E. Blechman, MD  
Cynthia A. Boxrud, MD  
Amarpreet S. Brar, MD  
Harvey A. Brown, MD  
Almira W. Cann, MD, PhD  
Arnett Carraby, MD  
Andrew M. Chang, MD  
Thomas B-H. Choi, MD  
Milton W. Chu, MD  
Robert A. Clark, MD  
Charles A. Cooper, MD  
Yadavinder P. Dang, MD  
Jonathan M. Davidorf, MD  
John L. Davidson, MD  
Sanford S. Davidson, MD  
Louise Cooley Davis, MD  
Farid Eghbali, OD  
Troy R. Elander, MD  
Naomi L. Ellenhorn, MD  
Calvin T. Eng, MD  
Joseph M. Faust, MD  
Doreen T. Fazio, MD  
Sanford G. Feldman, MD  
David R. Fett, MD  
Laura E. Fox, MD  
Ron P. Gallemore, MD  
George H. Garcia, MD  
Kathryn M. Gardner, MD  
Leslie C. Garland, MD  
W. James Gealy, Jr., MD  
Lawrence H. Green, MD  
Man M. Singh Hayreh, MD  
Matthew L. Hecht, MD  
Jonathan A. Hoenig, MD  
Jeffrey Hong, MD  
Morton P. Israel, MD  
Steven J. Jacobson, MD  
Batool Jafri, MD  
Véronique H. Jotterand, MD  
J. David Karlin, MD  
David S. Katzin, MD  
James F. Kleckner, MD  
Jerome R. Klein, MD  
Craig H. Kliger, MD  
Howard E. Lazerson, MD

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

### **Clinical Instructor in Ophthalmology**

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

### **Consulting Members of the Jules Stein Eye Institute**

Robert W. Baloh, MD  
 Professor of Neurology and Surgery  
 (Head and Neck)  
 Ferdinand V. Coroniti, PhD  
 Professor, Department of Physics  
 and Astronomy  
 David Eisenberg, DPhil  
 Investigator, Howard Hughes  
 Medical Institute  
 Director, UCLA-DOE Institute  
 for Genomics and Proteomics  
 Professor, Departments of  
 Chemistry & Biochemistry and  
 Biological Chemistry Molecular  
 Biology Institute  
 Alan M. Fogelman, MD  
 Castera Professor and  
 Executive Chair, Department  
 of Medicine  
 Alan D. Grinnell, PhD  
 Professor of Physiology and  
 Physiological Science  
 Director, Jerry Lewis Neuromuscular  
 Research Center  
 Director, Ahmanson Laboratory  
 of Neurobiology  
 Sherman M. Mellinkoff, MD  
 Professor Emeritus of Medicine  
 Former Dean, UCLA School  
 of Medicine  
 C. Kumar Patel, PhD  
 Professor, Department of  
 Physics and Astronomy  
 Antoni Ribas, MD  
 Associate Professor, Departments  
 of Hematology/Oncology and  
 Surgical Oncology  
 Assistant Director for  
 Clinical Programs, UCLA  
 Human Gene Medicine Program  
 Director, JCCC Cell and  
 Gene Therapy Core Facility  
 Leonard H. Rome, PhD  
 Senior Associate Dean for Research  
 Professor of Biological Chemistry  
 Peter C. Whybrow, MD  
 Judson Braun Professor and  
 Executive Chair, Department  
 of Psychiatry and  
 Biobehavioral Sciences  
 Director, Neuropsychiatric Institute  
 Physician in Chief,  
 Neuropsychiatric Hospital

# Residents and Fellows

## Residents

### Third-Year Residents 2008–2011

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

### Second-Year Residents 2009–2012

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

### First-Year Residents 2010–2013

Wanda Hu, MD  
Crystal Hung, MD  
Helen Lee Kornmann, MD, PhD  
(EyeSTAR)  
Ehsan Rahimy, MD  
David C. Reed, MD  
Neeta Varshney, MD  
Sylvia H. Yoo, MD

## EyeSTAR Trainees

Shaheen P. Karim, MD  
Diana Katsman, MD  
Helen Lee Kornmann, MD, PhD  
C. Nathaniel Roybal, MD, PhD  
Mauricio E. Vargas, MD, PhD

## Clinical Fellows

### Comprehensive Ophthalmology

Lev Grunstein, MD

### Corneal and External Ocular Diseases and Refractive Surgery

Kristina Kurbanyan, MD  
Matthew Swanic, MD

### Glaucoma

Vicki Chan, MD  
Gina Y. Lee, MD  
Jay Riddle, MD

### Orbital and Ophthalmic Plastic Surgery

Shu-Hong Holly Chang, MD  
David Isaacs, MD

### Pediatric Ophthalmology and Strabismus

Luke Deitz, MD  
Jessica Laursen, MD

### Uveitis and Inflammatory Eye Disease

Partho S. Kalyani, MD

### Vitreoretinal Diseases and Surgery

Christopher Gee, MD  
Allen Hu, MD  
Pradeep S. Prasad, MD  
Adriana Ramirez, MD

### Specialized Clinical Fellow

Minhee Woo, OD (Contact Lens)

## International Fellows

### Comprehensive Ophthalmology

Hamad Elzarrug, MD  
Libya

### Cornea-External Ocular Disease

Juan Arturo Ramirez-Miranda, MD  
Mexico  
Siamak Zarei-Ghanavati, MD  
Iran

### Glaucoma

Elena Bitrian, MD  
Spain  
Hamid Hosseini, MD  
Iran  
Haksu Kyung, MD, PhD  
Korea  
Sasan Moghimi, MD  
Iran  
Naveed Nilforushan, MD  
Iran

### Neuro-Ophthalmology

Majed Al-Obailan, MD  
Saudi Arabia

### Orbital and Ophthalmic Plastic Surgery

Imran Jarullazada, MD  
Azerbaijan  
Konstantinos Papageorgiou, MD  
Greece

### Pediatric Ophthalmology

Abubaker Affan, MD  
Libya  
Geoffrey Wabulembo, MD  
Uganda

### Uveitis and Refractive Surgery

Tiago Faria e Arantes, MD  
Brazil

### Visual Physiology

Letícia D. Alves, MD  
Brazil

### Vitreoretinal Diseases and Surgery

Valentina Franco-Cardenas, MD  
Mexico  
Gad Heilweil, MD  
Israel  
Kentaro Nishida, MD  
Japan

## Postdoctoral Research Fellows

Michael Bridges, PhD  
Emilie Colin, PhD  
Jeremy Cook, PhD  
Jun Deng, PhD  
Tanja Diemer, PhD  
Julian Esteve-Rudd, PhD  
Oluwatoyin Fafowora, MD, MPH  
Mark Fleissner, PhD  
Rajendra Kumar Gangalum, PhD  
Mei Jiang, PhD  
Zhe Jing, PhD  
Joanna Kaylor, PhD  
Miyeon Kim, PhD  
Gergana Kodjebacheva, PhD  
Carrie Louie, PhD  
John McCoy, PhD  
Hua Mei, PhD  
Maryam Mokhtarzadeh, MD  
Shawn Morales, PhD  
Martin Nakatsu, PhD  
Agrani Rump, PhD  
Shanta Sarfare, PhD  
Samuel Strom, PhD  
Chinatsu Toshi, PhD  
Deepti Trivedi, PhD  
Thu Thuy Truong, PhD  
Zhongyu Yang, PhD  
Jang "Lawrence" Yoo, PhD  
Alejandra Young, PhD

## Predocctoral Research Fellows

Kelly Cadenas  
Jun Isobe  
Michael Lerch  
Carlos Lopez  
Sheryll Mangahas  
Anita Narasimhan  
Allison Sargoy  
Andrew Shin



# Educational Offerings

## Ophthalmology and Vision Science Training Programs

### Sixteenth Annual Vision Science Conference

October 8–10, 2010

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

### UCLA/AUPO Introduction to Clinical Research Course

March 4–6, 2011

#### Course Directors

Gary N. Holland, MD  
Bartly J. Mondino, MD

Co-sponsored by the Association of University Professors of Ophthalmology, endorsed by the Association for Research in Vision and Ophthalmology, and supported by a grant from the National Eye Institute, this course provided a comprehensive overview of research methods, interpretation of statistical tests, regulatory issues, and manuscript preparation. It was designed to assist new investigators who are beginning their academic careers.

### 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 2010–2011, the following course components were offered:

#### Retina and Vitreous

September 29, 2010–

January 12, 2011

*Section Chairmen*

Michael B. Gorin, MD, PhD

Steven D. Schwartz, MD

#### Orbit, Eyelids and Lacrimal System

January 19–March 23, 2011

*Section Chairman*

Robert A. Goldberg, MD

#### Pediatric Ophthalmology and Strabismus

March 30–June 15, 2011

*Section Chairman*

Joseph L. Demer, MD, PhD

### Ophthalmology Clinical Conferences

#### Coordinators

Anthony C. Arnold, MD

Gary N. Holland, MD

The Clinical Conferences are offered in conjunction with the regular weekly Ophthalmology Basic and Clinical Science Course. These conferences review patient care activities of the UCLA Department of Ophthalmology, present general topics in ophthalmic science, and promote discussion of relevant aspects of ophthalmic pathology and pharmacy.

### Vision Science Seminar Series

#### Coordinator

Suraj P. Bhat, PhD

This seminar series, conducted throughout the academic year, allows faculty within the Jules Stein Eye Institute to present their research to other members of the Institute, thereby fostering the exchange of knowledge and cooperation. The series frequently includes presentations by eminent visitors to the UCLA campus.

### Phacoemulsification Course

October 2, 2010

May 14, 2011

#### Course Director

Kevin M. Miller, MD

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

### Study Groups

Focusing on specific topics in clinical ophthalmology, study groups meet regularly under the leadership of faculty members who are acknowledged specialists in their respective fields. The study groups are an integral part of the residency and clinical fellowship training programs and serve as an informal resource for practicing ophthalmologists in the community.

### Fluorescein Angiography Conference

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

### Glaucoma Weekly Conference

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

### Neuro-Ophthalmology Conference

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

### **Oculoplastics Conference**

This conference meets bimonthly and includes full-time and volunteer clinical faculty and visitors from the community who discuss oculoplastics and orbital cases presented by fellows and residents. The coordinator for the year was Robert Alan Goldberg, MD.

### **Ophthalmic Pathology Conference**

Faculty and residents meet daily to review pathological findings from current ophthalmology cases. The coordinator for the year was Ben J. Glasgow, MD.

### **Pediatric Ophthalmology and Strabismus Conference**

At monthly meetings rotating among Harbor-UCLA Medical Center, Olive View-UCLA Medical Center, and the Jules Stein Eye Institute, difficult pediatric ophthalmology and strabismus cases are presented and discussed. These conferences were coordinated for the year by Sherwin J. Isenberg, MD, at Harbor-UCLA Medical Center; Federico Velez, MD, at Olive View-UCLA Medical Center; and Joseph L. Demer, MD, PhD, at the Jules Stein Eye Institute.

### **Pediatric Rheumatology and Uveitis Conference**

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

## **Continuing Education Programs**

### **Aesthetic Eyelid and Orbitofacial Surgery Course**

July 23–24, 2010

#### **Robert Axelrod Memorial Lecturer**

Alan M. Lessner, MD  
University of Florida

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

### **Joint Symposium on Cornea and Retina**

January 9, 2011

#### **Course Chair**

Melissa W. Chun, OD

Optometrists from across California traveled to Los Angeles to attend the 13th Annual Jules Stein Eye Institute and Southern California College of Optometry Joint Optometric Symposium focusing on Cornea and Retina. The program included lectures by featured speakers from the Jules Stein Eye Institute and other institutions.

### **Comprehensive Ophthalmology Review Course**

February 23–27, 2011

#### **Course Directors**

David Sarraf, MD  
John Irvine, MD

The Jules Stein Eye Institute and the Doheny Eye Institute sponsored the Fifth Annual Comprehensive Ophthalmology Review Course. Developed to serve ophthalmology-training programs in Southern California, the program concentrated on the epidemiology, clinical presentation, diagnosis and management of ophthalmological disease.

## **JSEI Clinical and Research Seminar**

June 10, 2011

#### **Coordinators**

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

Geared to physicians and basic scientists, this seminar is an intensive course in which UCLA and guest faculty present current concepts and recent advances in ophthalmology. The Jules Stein Lecture, the Bradley R. Straatsma Lecture, and the Thomas H. Pettit Lecture, which commemorate each doctor's contributions to ophthalmic science at UCLA and throughout the United States, are held in conjunction with this seminar and are among the academic highlights of the year.

#### **42nd Jules Stein Lecturer**

R. Lawrence Tychsens, MD  
Professor of Ophthalmology and Visual Sciences, Pediatrics, Anatomy and Neurobiology  
Washington University  
School of Medicine  
St. Louis, Missouri

#### **9th Bradley R. Straatsma Lecturer**

Matthew M. LaVail, PhD  
Professor of Anatomy and Ophthalmology  
Beckman Vision Center  
UCSF School of Medicine  
San Francisco, California

#### **9th Thomas H. Pettit Lecturer**

Harry S. Geggel, MD  
Head of Section Ophthalmology  
Director of Cornea and Refractive Surgery  
Virginia Mason Medical Center  
Seattle, Washington

# Research Contracts and Grants Fiscal Year 2010–2011

## Vision Science Grants

**Total Award**

### Anthony J. Aldave, MD

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

\$831,195

Cloning/Gene/Posterior Corneal Dystrophy  
National Eye Institute: ARRA Administrative Supplement  
Duration: 9/1/09–8/31/11

\$166,240

### Suraj P. Bhat, PhD

Gene Expression in Normal and Cataractous Lens  
National Eye Institute  
Duration: 6/1/06–5/31/11

\$2,444,126

Gene Expression in Normal and Cataractous Lens  
National Eye Institute: ARRA Administrative Supplement  
Duration: 1/1/10–12/31/10

\$79,000

### Dean Bok, PhD

Identification and Cellular Localization of Gene Products that Affect  
Photoreceptor Survival in Inherited Retinal Degeneration  
Macula Vision Research Foundation  
Duration: 4/1/08–3/31/12

\$150,000

### Joseph Caprioli, MD

Comparing the Effectiveness of Treatment Strategies for  
Primary Open-Angle Glaucoma  
Outcome Sciences, Inc.  
Duration: 4/29/11–4/28/13

\$115,962

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

\$30,000

### Anne L. Coleman, MD, PhD

ARRA: Evidence Development for Topics Identified as National Priorities for  
Comparative Effectiveness Research  
Outcome Sciences, Inc.  
Duration: 9/30/09–9/29/11

\$106,551

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

\$19,000

### Joseph L. Demer, MD, PhD

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

\$2,647,114

Walt and Lilly Disney Award for Amblyopia Research  
Research to Prevent Blindness  
Duration: 7/1/04–12/30/10

\$75,000

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

Genetic and Anatomic Basis of the Fibrosis Syndrome  
 NEI/Boston Childrens Hospital  
 Duration: 12/1/08–11/30/10 \$117,560

**Sophie X. Deng, MD, PhD**

Diagnosis and Staging of Limbal Stem Cell Deficiency Using in Vivo Laser  
 Prevent Blindness America  
 Duration: 7/1/10–6/30/11 \$25,000

Regeneration of Functional Human Corneal Epithelial Progenitor Cells  
 California Institute for Regenerative Medicine  
 Duration: 3/1/11–2/28/12 \$569,696

**Gordon L. Fain, PhD**

Physiology of Photoreceptors  
 National Eye Institute  
 Duration: 8/1/08–7/31/12 \$1,000,000

**Debra B. Farber, PhD, DPhc**

Molecular Mechanisms in Retinal Degeneration  
 National Eye Institute  
 Duration: 7/1/06–11/30/11 \$1,507,647

Characterization of the Interaction between ZBED4, a Novel Retinal Protein, and SAFB1  
 Hope for Vision  
 Duration: 11/1/09–10/31/11 \$60,000

**JoAnn A. Giaconi, MD**

Evaluation of Evidence Based Glaucoma Practices at the VA  
 American Glaucoma Society  
 Duration: 9/1/10–8/31/11 \$10,000

Nutritional Associations w/Glaucoma/African American Women  
 American Glaucoma Society  
 Duration: 2/1/06–12/31/10 \$40,000

**Ben J. Glasgow, MD**

Proteins in Molecular Mechanisms of Tear Film Formation  
 National Eye Institute  
 Duration: 7/1/06–6/30/11 \$1,250,000

**Lynn K. Gordon, MD, PhD**

Novel Therapies to Prevent Blindness Caused by Proliferative Vitreoretinopathy  
 National Eye Institute  
 Duration: 4/1/10–3/31/15 \$1,250,000

**Michael B. Gorin, MD, PhD**

Genetics in Age-Related Maculopathy  
 National Eye Institute  
 Duration: 4/1/07–3/31/12 \$6,445,729

Genetics in Age-Related Maculopathy  
 National Eye Institute: ARRA Administrative Supplement  
 Duration: 9/30/09–9/29/11 \$730,926

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

UCLA Jules Stein Eye Institute Center Grant Foundation Fighting Blindness Duration: 7/1/10–6/30/11	\$104,827/\$314,481
Diabetic Retinopathy Diagnosis Device Neuro Kinetics Inc. Duration: 9/1/10–11/30/11	\$119,786
<b>Gary N. Holland, MD</b>	
Studies of Ocular Complications of AIDS (SOCA) National Eye Institute Duration: 8/1/05–7/31/10	\$2,061,462
Longitudinal Studies of Ocular Complications of AIDS (LSOCA) National Eye Institute Duration: 8/1/03–7/31/10	\$1,017,221
Multicenter Uveitis Steroid Treatment (MUST) Trial National Eye Institute Duration: 12/1/10–11/30/17	\$983,080
International Consensus Meeting on CMV Retinitis amfAR Aids Research Duration: 8/1/10–7/31/11	\$25,000
UCLA/AUPO Introduction to Clinical Research Course National Eye Institute Duration: 9/1/10–8/31/11	\$43,744
Academic Research Organization for Research with Retinal Cells Derived from Stem Cells for Stargardt's Macular Dystrophy Advanced Cell Technology Duration: 4/25/11–4/24/13	\$428,740
Academic Research Organization for Research with Retinal Cells Derived from Stem Cells for Age-Related Macular Degeneration Advanced Cell Technology Duration: 5/31/11–5/30/13	\$428,740
<b>Joseph Horwitz, PhD</b>	
Alpha-Crystallin and Cataractogenesis National Eye Institute Duration: 8/1/04–7/31/10	\$2,747,031
Alpha-Crystallin and Cataractogenesis National Eye Institute: ARRA Administrative Supplement Duration: 8/1/09–7/31/11	\$241,644
<b>Wayne L. Hubbell, PhD</b>	
Molecular Basis of Membrane Excitation National Eye Institute Duration: 5/1/10–4/30/15	\$2,852,722
Core Grant for Vision Research at Jules Stein Eye Institute National Eye Institute Duration: 3/1/10–2/28/15	\$2,737,632

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

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

**Sherwin J. Isenberg, MD**

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

**Ralph D. Levinson, MD**

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

**Tara A. McCannel, MD, PhD**

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

**Kevin M. Miller, MD**

Clinical Testing of the Tracking Adaptive-Optic Scanning Laser Ophthalmoscope  
Physical Optics Corp./NIH  
Duration: 1/15/11–9/29/11 \$62,500

**Bartly J. Mondino, MD**

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

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

**Kouros Nouri-Mahdavi, MD**

To Establish an Electrophysiology Lab for Evaluating the Role of Pattern ERG in  
Functional Assessment of Glaucoma  
American Glaucoma Society  
Duration: 9/1/10–8/31/11 \$10,000

Optimizing Imaging of the Retinal Nerve Fiber Layer with Spectral-Domain  
Optical Coherence Tomography  
American Glaucoma Society  
Duration: 4/1/11–12/31/11 \$40,000

**Steven Nusinowitz, PhD, Principal Investigator**

**w/Dean Bok, PhD, Michael B. Gorin, MD, PhD**

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

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

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

**Stacy L. Pineles, MD**

A Randomized Clinical Trial of Observation Versus Occlusion Therapy for Intermittent Exotropia  
Jaeb Center for Health Research  
Duration: 2/28/11–12/31/13 \$27,296

**Natik I. Piri, PhD**

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

**Arthur L. Rosenbaum, MD**

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

**David Sarraf, MD**

Ranibizumab (Lucentis) for Treating Submacular Vascularized PED  
Southern California Desert Retina Consultants  
Duration: 7/2/10–6/30/12 \$119,304

**Gabriel H. Travis, MD**

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

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

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

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

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

**Federico G. Velez, MD**

Development of an Electrical-Stimulation Device to Prevent Strabismic Amblyopia  
Gerald Oppenheimer Family Foundation Center for the Prevention of Eye Disease  
Duration: 1/1/10–12/31/10 \$30,000

**David S. Williams, PhD**

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

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

<p>MY07A Gene Therapy for Usher 1B-UCLA  National Neurovision Research Institute (NNRI) a support organization of  The Foundation Fighting Blindness, Inc.  Wynn-Gund Translational Research Acceleration Program Award  Duration: 7/1/08–6/30/13</p>	\$1,325,415
<p>Retinal Cell Biology of Myosin VIIA  National Eye Institute  Duration: 7/1/09–6/30/14</p>	\$1,925,000
<p>Kinesin in Photoreceptor Cells  National Eye Institute: ARRA Administrative Supplement  Duration: 9/30/09–9/29/10</p>	\$385,000
<b>Xian-Jie Yang, PhD</b>	
<p>Cytokine Signal Transduction in Retinal Development  National Eye Institute  Duration: 9/30/05–7/31/10</p>	\$1,506,044
<p>Hedgehog Signaling in Photoreceptor Differentiation and Maintenance  National Eye Institute  Duration: 12/1/09–11/30/13</p>	\$1,540,000

### Professional Research Series Grants

#### Novruz Ahmedli, PhD, and Debora B. Farber, PhD, DPhhc

<p>Studies on 7R, A Novel Protein that when Mutated Causes  Autosomal Recessive Retinitis Pigmentosa  Hope for Vision  Duration: 3/1/10–2/28/11</p>	\$50,000
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### Postdoctoral Fellow Grants

#### Gergana Kodjebacheva, PhD

##### Anne L. Coleman, MD, PhD (Mentor)

<p>Prevention of Visual Impairment and Blindness in School-Age Children  Gerald Oppenheimer Family Foundation Center for the Prevention of Eye Disease  Duration: 1/1/10–12/31/10</p>	\$30,000
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#### Shawn Morales, PhD

##### Lynn K. Gordon, MD, PhD (Mentor)

<p>Novel Therapies to Prevent Blindness caused by Ocular Trauma and  Proliferative Vitreoretinopathy  A.P. Giannini Foundation  Duration: 4/1/09–3/31/12</p>	\$125,000
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#### Lawrence Yoo, PhD

##### Joseph L. Demer, MD, PhD (Mentor)

<p>Biomechanical Characterization and Modeling of Ocular Tissue  Gerald Oppenheimer Family Foundation Center for the Prevention of Eye Disease  Duration: 1/1/10–12/31/10</p>	\$30,000
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Total awards for NIH, Clinical, and PI-Initiated Research include indirect cost.



**Alejandra Young, PhD**

**Debora B. Farber, PhD, DPhhc (Mentor)**

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

\$108,930

**EyeSTAR Graduate Student Grants**

**Diana Katsman, MD, and Debora B. Farber, PhD, DPhhc**

Activation of Retinal Regenerative Potential by  
Embryonic Stem Cell-Derived Microvesicles  
Hope for Vision  
Duration: 1/15/10–1/14/12

\$150,000

**Clinical Trials**

**Sophie X. Deng, MD, PhD**

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

\$54,128

**Jean-Pierre Hubschman, MD**

A Phase 1, Ascending Dose and Parallel Group Trial to Establish the Safety,  
Tolerability and Pharmacokinetic Profile of Multiple Intravitreal Injections  
Ophthotech Corporation  
Duration: 4/29/09– 4/29/11

\$53,155

A Phase III, Multicenter, Randomized, Double-Masked Study Comparing  
the Efficacy & Safety of 0.5mg & 2.0mg of Ranibizumab  
Genentech  
Duration: 10/13/09– 3/1/13

\$845,625

**Steven Nusinowitz, PhD**

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

\$31,700

**Steven D. Schwartz, MD**

Research with Retinal Cells Derived from Stem Cells for  
Stargardt's Macular Dystrophy  
Advanced Cell Technology  
Duration: 3/23/11–3/22/13

\$762,184

Research with Retinal Cells Derived from Stem Cells for  
Age-Related Macular Degeneration  
Advanced Cell Technology  
Duration: 4/5/11–4/5/13

\$835,693

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

AGN206207-011: DEX PS DDS Applicator System in the Treatment of Patients with Diabetic Macular Edema Allergan Sales, LLC Duration: 8/25/05–12/31/13	\$1,604,947
TG-MV-006: A Randomized, Placebo-Controlled, Masked, Multicenter Trial of Microplasmin Intravitreal Injection for Non-Surgical Treatment of Focal Vitreomacular Adhesion Chiltern Int. Duration: 3/3/09–9/3/10	\$205,683
Age-Related Eye Disease Study II Emmes Corp. Duration: 1/1/06–12/31/12	\$241,461
FVF4168g: Ranibizumab Injection Genentech, Inc. Duration: 10/5/07–8/31/12	\$553,500
GV-000.000: Gene Transfer Product Candidates in Clinical Development Gen Vec, Inc. Duration: 2/27/09–2/26/24	\$39,537
A Natural History Study of Macular Telangiectasia Lowy Medical Research Institute/NEI Duration: 9/1/05–8/31/10	\$185,695
Resolution of Vitreomacular Adhesion (VMA) Associated w/Neovascular Age-Related Macular Degeneration (AMD) w/Intravitreal Microplasmin ThromboGenics, Inc. Duration: 6/30/09–6/29/11	\$42,495

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

# Clinical Research Studies

## Cornea and External Eye

### Analysis of the Corneal and Limbal Epithelial Changes in Limbal Stem Cell Deficiency using In Vivo Confocal Microscopy

Investigators are working to establish a system for diagnosing limbal stem cell deficiency at a cellular level by correlating the information from impression cytology tests, confocal microscopy pictures, and medical records. Investigators: Sophie X. Deng, MD, PhD; and Anthony J. Aldave, MD

### Genetic Basis of Posterior Polymorphous Corneal Dystrophy

Funded by the National Eye Institute, this study seeks to identify the gene(s) responsible for posterior polymorphous dystrophy, an inherited corneal endothelial disorder that may result in irreversible corneal swelling and loss of vision. Investigators: Anthony J. Aldave, MD; and Gary N. Holland, MD

### Identifying Novel Genes for Fuchs' Corneal Endothelial Dystrophy

In this multicenter study, investigators are working to identify the gene(s) responsible for Fuchs' corneal endothelial dystrophy, an inherited disorder that may result in irreversible corneal swelling and loss of vision. Investigators: Anthony J. Aldave, MD; Gary N. Holland, MD; and Bartly J. Mondino, MD

### Keratoprosthesis Implantation in Patients with Corneal Opacification

This study aims to determine the success rate of keratoprosthesis (artificial corneal) transplantation for visual rehabilitation in patients with corneal opacification. Investigators: Anthony J. Aldave, MD; and Gary N. Holland, MD

## Eye Infections and Inflammations

### Corneal Endothelial Cell Changes in Patients with Uveitis

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

### Factors Related to the Severity of Ocular Toxoplasmosis

Toxoplasmosis is a common parasitic disease that can cause a vision-threatening infection of the retina. Individuals with and without ocular toxoplasmosis are being evaluated with a blood test to determine whether (1) people can have a genetic predisposition to severe disease when infected with the parasite, or (2) there is a particular strain of parasite that causes more severe disease than others. Investigators: Gary N. Holland, MD; and Ralph D. Levinson, MD

### Longitudinal Studies of the Ocular Complications of AIDS (LSOCA)

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

### Multicenter Uveitis Steroid Treatment (MUST)

Investigators are comparing two currently available treatments for uveitis. Systemic treatment utilizing medications taken orally, by injection, or by intravenous infusion is being compared to treatment with an intraocular implant containing corticosteroid. Investigators: Gary N. Holland, MD; Jean-Pierre Hubschman, MD; and Ralph D. Levinson, MD

## Natural Killer Cell Receptor Genes and AIDS-Related CMV Retinitis

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

### Povidone-Iodine for the Treatment of Fungal Corneal Ulcers

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

### A Comprehensive Analysis of Visual Function in Patients Diagnosed with HIV

The main goal of this study is to determine the sequence of events that lead to visual disturbances in HIV-infected patients. Investigators will obtain measures of visual function with a series of established clinical electrophysiological and psychophysical tests commonly used to evaluate the function at different sites within the retina. Results of this study may enable better understanding and measurements of how vision is affected in subjects diagnosed with HIV. Investigators: Steven Nusinowitz, PhD; and Gary N. Holland, MD

## General Ophthalmology

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

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

## **Glaucoma and Optic Nerve**

### **Clinical Measurements of the Optic Nerve in Glaucoma**

The goal of this study is to develop novel structural measures of the optic nerve and nerve fiber layer, which are sensitive and specific for early and progressive glaucomatous optic nerve damage. Investigators: Joseph Caprioli, MD; Anne L. Coleman, MD, PhD; and Simon K. Law, MD, PharmD

### **Earlier Intraocular Pressure Control after Ahmed Glaucoma Valve Implantation**

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

### **Effect of Yoga on Glaucoma**

The purpose of this study is to examine the practice of yoga and its ability to improve a patient's vision by relieving stress and reducing eye pressure. Investigator: Anne L. Coleman, MD, PhD

### **Glaucoma Drainage Devices and Filtering Surgery with Antimetabolites**

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

### **Glaucomatous Cupping and Visual Field Abnormalities in Chinese Young Adults**

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

### **Ocular Hypertension Treatment Study (OHTS)**

Since topical hypotensive medications are safe and effective in delaying or preventing primary open angle glaucoma, this study is examining whether other forms of treatment can be deferred with little or no penalty. Investigator: Anne L. Coleman, MD, PhD

### **Optic Nerve Appearance in Age-Related Macular Degeneration**

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

### **Vision-Related Quality of Life and Ocular Dominance**

This study is designed to evaluate how quality of life is impacted by glaucoma in relation to eye dominance. It aims to determine whether quality of life is affected more by glaucoma if it primarily affects the dominant eye. Investigators: Simon K. Law, MD, PharmD; Joseph Caprioli, MD; Anne L. Coleman, MD, PhD; and JoAnn Giaconi, MD

### **Ocular Biometric Measurements in Angle Closure Glaucoma**

The purpose of this study is to determine the potential contributing factors in angle closure patients of different ethnicities and to determine predictive factors for this type of glaucoma. Investigators: Naveed Nilforushan, MD; Joseph Caprioli, MD; Anne L. Coleman, MD, PhD; Simon K. Law, MD, PharmD; and Kouros Nouri-Mahdavi, MD

### **Glaucoma Imaging Study**

This study is evaluating different imaging techniques and their use in improving open angle glaucoma detection. Investigators: Kouros Nouri-Mahdavi, MD; and Joseph Caprioli, MD

### **Role of Pattern Electroretinogram (PERG) in Glaucoma**

This study is researching an electrophysiological test called pattern electroretinogram (PERG). The goal is to determine the role of PERG in estimating the risk of future glaucoma progression and the reversibility of glaucomatous damage after treatment. The latter could help clinicians better determine to what extent eye pressure needs to be lowered to prevent disease progression. Investigators: Kouros Nouri-Mahdavi, MD; Joseph Caprioli, MD; Anne L. Coleman, MD, PhD; JoAnn Giaconi, MD; and Simon K. Law, MD, PharmD

## **Lens and Cataract**

### **Comparison of the ARK 650 Autorefractor and Standard Methods**

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

### **Morcher Iris Diaphragm**

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

### **Ophtec Iris Reconstruction Lens**

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

### **Macula, Retina, and Vitreous**

#### **Air, Perfluoropropane and Sulfur Hexafluoride Gas Disappearance Variability after Vitrectomy**

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

#### **Argus II Retinal Stimulation System Feasibility**

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

### **BLOCK ROP Study**

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

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

Investigators are doing a comprehensive analysis of visual function in patients diagnosed with Stargardt disease, an early onset form of macular degeneration caused by a number of mutations in the *abcr* gene. They are performing molecular genetic testing to confirm the Stargardt diagnosis and better understand the diversity of the condition. Investigators: Michael B. Gorin, MD, PhD; Debora B. Farber, PhD, DPhc; Steven Nusinowitz, PhD; and Maria Carolina Ortube, MD

#### **Dexamethasone Injections in the Treatment of Diabetic Macular Edema**

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

#### **Genetics of Age-Related Maculopathy (GARM I)**

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

#### **Genetics of Age-Related Maculopathy (GARM II)**

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

#### **Heavy Metals in Surgically Removed Human Ocular Tissue**

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

#### **Incidence of Late Macular Degeneration in Older Women**

The goal of this research is to determine the incidence of late age-related macular degeneration (AMD), the rate of progression of AMD, and the association of specific risk factors such as diabetes mellitus and prior cataract surgery with late AMD and its progression in older women. Investigator: Anne L. Coleman, MD, PhD

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

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

### **Natural History Study of Macular Telangiectasia**

Investigators are collecting data about macular telangiectasia with the goal of acquiring more knowledge of and developing a treatment for this rare retinal disease. Investigators: Steven D. Schwartz, MD; Michael B. Gorin, MD, PhD; Jean-Pierre Hubschman, MD; Allan E. Kreiger, MD; Tara A. McCannel, MD, PhD; and David Sarraf, MD

### **Ocular Hazards from Currently Available Light Curing Units**

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

### **P200CAF Autofluorescence Ultra-Widefield Scanning Laser Ophthalmoscope in Subjects with Vitreoretinal Disease**

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

### **Pars Plana Vitrectomy with and without ILM Peel**

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

### **Rapid, Noninvasive, Regional Functional Imaging of the Retina**

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

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

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

### **Understanding the Genetics of Inherited Eye Disorders**

The Institute is participating in a study to search for the gene(s) responsible for inherited disorders that are either specific to the eye or have eye findings as part of the medical condition. This study provides for the clinical characterization of affected individuals and at-risk family members, in conjunction with molecular genetic testing, to identify the causative genes and mutations. Investigators: Anthony J. Aldave, MD; Michael B. Gorin, MD, PhD; and Maria Carolina Ortube, MD

### **Vitamin Supplementation as Treatment for Dry Age-Related Macular Degeneration**

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

### **Research with Retinal Cells Derived from Stem Cells for Dry Age-Related Macular Degeneration (AMD)**

This study is evaluating the safety of surgical procedures used to implant MA09-hRPE cells, assessing the number of cells to be transplanted in future studies, and evaluating measures for determining the effectiveness of future stem cell therapy for AMD. Investigators: Steven D. Schwartz, MD; Jean-Pierre Hubschman, MD; and Allan E. Kreiger, MD

### **Research with Retinal Cells Derived from Stem Cells for Stargardt Macular Dystrophy**

This study is evaluating the safety of surgical procedures used to implant MA09-hRPE cells, assessing the number of cells to be transplanted in future studies, and evaluating measures for determining the effectiveness of future stem cell therapy for Stargardt macular dystrophy. Investigators: Steven D. Schwartz, MD; Jean-Pierre Hubschman, MD; and Allan E. Kreiger, MD

### **A Safety and Tolerability Trial of CNTF in Patients with MacTel Type 2**

This study is assessing the safety of the NT-501 implant in patients with macular telangiectasia type 2. The device, an implant, is a small capsule of cells that is placed inside the eye. This allows a controlled, sustained release of CNTF directly to the retina. Investigators: Steven D. Schwartz, MD; Jean-Pierre Hubschman, MD; and Allan E. Kreiger, MD

## Neuro-Ophthalmology

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

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

### Exposure as a Potential “Trigger Factor” for Acute NAION

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

### Idiopathic Intracranial Hypertension (IIH) with Mild Visual Loss

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

## Ocular Melanoma

### Molecular and Cytogenetic Studies of Ocular Melanoma

The goal of this research is to study ocular melanoma tumor tissue and to identify key molecular and genetic features that could help predict those patients who may be at high risk for metastasis. Investigators: Tara A. McCannel, MD, PhD; Lynn K. Gordon, MD, PhD; and Bradley R. Straatsma, MD, JD

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

In this study, optical coherence therapy (OCT) imaging is performed during regularly scheduled visits on patients with choroidal nevus, choroidal melanoma, and choroidal melanoma treated with iodine-125 brachytherapy. The purpose is threefold: to study the structure and function of the retina overlying the tumor and the macula, to evaluate the effects of radiation on the retina, and to compare OCT imaging to other imaging procedures. Investigators: Tara A. McCannel, MD, PhD; and Bradley R. Straatsma, MD, JD

### PET/CT Imaging for Early Detection of Ocular Melanoma

This research involves the use of combined positron emission tomography (PET)/computed tomography (CT) scans in subjects with ocular melanoma. It may ultimately provide new knowledge that will be used to develop better ways of monitoring for tumor spread and allow for early treatment if metastasis is found. Investigators: Tara A. McCannel, MD, PhD; and Bradley R. Straatsma, MD, JD

## Ocular Pathology

### Clinicocytological Correlation of Ocular Surface Abnormalities

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

## Orbital and Ophthalmic Plastic Surgery

### Volumetric Analysis of Orbital Images (CT and MRI Sequences) with Mimics Image Processing Software

This study is evaluating the volumetric changes of orbital tissues using a validated 3D image processing software. Orbital diseases such as thyroid eye disease, myositis, inflammatory and neoplastic conditions are characterized by significant soft tissue changes. Their assessment with Mimics software is helpful in understanding the clinical course of these diseases, as well as defining the etiologic and pathogenetic mechanisms involved. Investigator: Robert A. Goldberg, MD

### Ultrasound Study of Eyelid Mobility Before and After Blepharoplasty and Injectable Fillers

This study uses a high-resolution ultrasound machine to capture real-time films of the tissues immediately surrounding the eye. Patients in each of the following three arms are being studied: pre/post botulinum toxin injection, pre/post synthetic filler injection, and pre/post periocular cosmetic surgery, including fat repositioning or fat transfer. Data gathered is being used to study the dispersion of filler injections, to gain more detailed and accurate insight into this cosmetic field. Investigator: Robert A. Goldberg, MD

### Studies on Tissue in Autoimmune Diseases

This study aims to determine the cause of eye problems in Graves disease and other autoimmune diseases. Examination is being done of material removed from orbits during surgical therapy for Graves disease or other problems requiring surgery on the tissue surrounding the eyes; of thyroid tissue removed during the course of surgical therapy; or of blood drawn for laboratory tests. Investigator: Robert A. Goldberg, MD

### **Quality of Life Study in Patients with Graves Disease**

This study is assessing the quality of life in patients with Graves disease orbitopathy before and after medical treatment or medical procedures. Investigator: Robert A. Goldberg, MD

### **Pediatrics and Strabismus**

#### **Biomechanical Analysis in Strabismus Surgery**

This study aims to develop new diagnostic tests and computer models that will lead to improvements in strabismus surgery. Tests of binocular alignment and eye movements, as well as magnetic resonance imaging of the extraocular muscles, are being performed in the Institute's Clinical and Basic Science Ocular Motility Laboratory before and after strabismus surgery. To date, this research has fundamentally contributed to the knowledge of the functional anatomy of the extraocular muscles and connective tissues, and allowed discovery of causes of common strabismus and development of new types of surgeries. Investigator: Joseph L. Demer, MD, PhD

#### **Blood Gas Monitoring from the Eye**

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

#### **Contact Lens Study**

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

### **Genetic and Anatomic Studies of Eye Movement Disorders**

This collaborative National Eye Institute-funded study is conducting magnetic resonance imaging of the extraocular muscles. This procedure clarifies the phenotypes and mechanisms of congenital cranial dysinnervation syndromes whose hereditary properties have been characterized using modern molecular genetics. Patients with these syndromes have severe forms of strabismus. Investigator: Joseph L. Demer, MD, PhD

#### **Optic Nerve in Amblyopia**

Amblyopia is a major cause of childhood visual loss. This study uses high resolution, surface-coil magnetic resonance imaging to study optic nerve size in amblyopia. It tests the theory that the optic nerve is smaller than normal in amblyopia and that optic nerve size may be a limiting factor in restoration of vision by amblyopia treatment. Investigator: Joseph L. Demer, MD, PhD

#### **A Randomized Clinical Trial of Observation Versus Occlusion Therapy for Intermittent Exotropia**

Although occlusion treatment, or patching of the eye, is a widely used treatment for intermittent exotropia (IXT), there have been no randomized clinical trials evaluating its effectiveness. This study is being conducted to assess the natural history of IXT and to establish the effectiveness of patching in its treatment. Investigators: Stacey L. Pineles, MD; and Federico G. Velez, MD

#### **Sweep Visual Evoked Potential for Use in Amblyopia and Pediatric Optic Nerve Disorders**

Using a new technique, investigators are measuring vision in preverbal children to diagnose and follow optic nerve diseases. Currently, treatment decisions are based on clinical examinations that are insensitive and reveal vision loss well after permanent damage has taken place. This technique allows more accurate examinations,

leading to provision of treatments at the first signs of vision loss, thereby decreasing the risk of permanent damage. Investigators: Stacey L. Pineles, MD; Joseph L. Demer, MD, PhD; Sherwin Isenberg, MD; and Federico G. Velez, MD

#### **Prospective Study to Determine the Proportion of Patients with Isolated Third, Fourth, and Sixth Nerve Palsies of Microvascular Versus Nonmicrovascular Etiology**

Currently, MRI scanning is only recommended in atypical cases (young age, no vascular risk factors). The purpose of this multicenter study is to determine whether central nervous system abnormalities are detected in patients who otherwise would not have neuroimaging. Investigator: Stacey L. Pineles, MD

#### **Optical Coherence Tomography in the Newborn Eye**

The purpose of this study is to better characterize the retina and optic nerve in newborns using spectral domain optical coherence tomography (SD-OCT). SD-OCT has been used by doctors for more than five years to help diagnose and treat adults with eye diseases, but it has never been studied in newborns, where it could potentially help in the diagnoses of glaucoma, optic nerve hypoplasia, foveal hypoplasia, and colobomata, among many other disorders. Investigator: Sherwin J. Isenberg, MD

#### **Prevention of Visual Impairment In School-Age Children**

In this community-based participatory intervention to promote the use of eyeglasses in schools, first- and second-grade students with refractive errors receive two pairs of eyeglasses, with one pair staying at home and the other in the classroom. School nurses collaborate with teachers in monitoring the use of eyeglasses in the classroom, and parents receive eye care education. Investigators: Gergana Kodjebacheva, PhD; and Anne L. Coleman, MD, PhD



# Publications of the Full-Time Faculty

Miyake N, **Demer JL**, Shaaban SE, Andrews C, Chan WM, Christiansen SP, Hunter DG, Engle EC. Expansion of the CHN1 strabismus phenotype. *Invest Ophthalmol Vis Sci*. 2011 Jun 29.

Kitamura E, Gribanova YE, **Farber DB**. Regulation of retinoschisin secretion in Weri-Rb1 cells by the F-actin and microtubule cytoskeleton. *PLoS One*. 2011;6(6):e20707. Epub 2011 Jun 27.

Kao L, Kurtz LM, Shao X, Papadopoulos MC, Liu L, **Bok D, Nusinowitz S**, Chen B, Stella SL, Andre M, Weinreb J, Luong SS, **Piri N**, Kwong JM, Newman D, Kurtz I. Severe neurologic impairment in mice with targeted disruption of the electrogenic sodium bicarbonate cotransporter NBCe2 (Slc4a5). *J Biol Chem*. 2011 Jun 24. [Epub ahead of print]

Ramirez-Miranda A, Nakatsu MN, Zarei-Ghanavati S, Nguyen CV, **Deng SX**. Keratin 13 is a more specific marker of conjunctival epithelium than keratin 19. *Mol Vis*. 2011;17:1652–61. Epub 2011 Jun 18.

**Sun H**. Membrane receptors and transporters involved in the function and transport of vitamin A and its derivatives. *Biochim Biophys Acta*. 2011 Jun 17. [Epub ahead of print]

Truong TT, Huynh K, Nakatsu MN, **Deng SX**. SSEA4 is a potential negative marker for the enrichment of human corneal epithelial stem/progenitor cells. *Invest Ophthalmol Vis Sci*. 2011 Jun 17. [Epub ahead of print]

McKay GJ, Silvestri G, Chakravarthy U, Dasari S, Fritsche LG, Weber BH, Keilhauer CN, Klein ML, Francis PJ, Klaver CC, Vingerling JR, Ho L, De Jong PT, Dean M, Sawitzke J, Baird PN, Guymer RH, Stambolian D, Orlin A, Seddon JM, Peter I, Wright AF, Hayward C, Lotery AJ, Ennis S, **Gorin MB**, Weeks DE, Kuo CL, Hingorani AD, Sofat R, Cipriani V, Swaroop A, Othman M, Kanda A, Chen W, Abecasis GR, Yates JR, Webster AR, Moore AT, Seland JH, Rahu M, Soubrane G, Tomazzoli L, Topouzis F, Vioque J,

Young IS, Fletcher AE, Patterson CC. Variations in apolipoprotein E frequency with age in a pooled analysis of a large group of older people. *Am J Epidemiol*. 2011 Jun 15;173(12):1357–64.

Zarei-Ghanavati S, Baghdasaryan E, Ramirez-Miranda A, Nguyen M, Yu F, Lee GJ, **Deng SX**. Elevated intraocular pressure is a common complication during active microbial keratitis. *Am J Ophthalmol*. 2011 Jun 15. [Epub ahead of print]

Chiang MF, Boland MV, Brewer A, Epley KD, Horton MB, Lim MC, **McCannel CA**, Patel SJ, Silverstone DE, Wedemeyer L, Lum F; American Academy of Ophthalmology Medical Information Technology Committee. Special requirements for electronic health record systems in ophthalmology. *Ophthalmology*. 2011 Jun 14. [Epub ahead of print]

Januszyk K, Fleissner MR, Atchabedian L, Shieh FK, Altenbach C, Martin SL, Guo F, **Hubbell WL**, Clubb RT. Site-directed spin labeling electron paramagnetic resonance study of the ORF1 protein from a mouse L1 retrotransposon. *Protein Sci*. 2011 Jul;20(7):1231–43. Epub 2011 Jun 14.

Allen MH, Green MD, Getaneh HK, **Miller KM**, Long TE. Tailoring charge density and hydrogen bonding of imidazolium copolymers for efficient gene delivery. *Biomacromolecules*. 2011 Jun 13;12(6):2243–50.

Topouzis F, Wilson MR, Harris A, Founti P, Yu F, Anastasopoulos E, Pappas T, Koskosas A, Salonikiou A, **Coleman AL**. Risk factors for primary open-angle glaucoma and pseudoexfoliative glaucoma in the Thessaloniki Eye Study. *Am J Ophthalmol*. 2011 Jun 9.

Pitcher JD 3rd, **McCannel CA**. Characterization of the fluidic properties of a syringe-based portable vitrectomy device. *Retina*. 2011 Jun 8. [Epub ahead of print]

Van Eps N, Preininger AM, Alexander N, Kaya AI, Meier S, Meiler J, Hamm HE, **Hubbell WL**. Interaction of a G protein with an activated receptor opens the interdomain interface in the alpha subunit. *Proc Natl Acad Sci USA*. 2011 Jun 7;108(23):9420–4.

Yoo L, Reed J, Shin A, Kung J, Gimzewski JK, Poukens V, **Goldberg RA**, Mancini R, Taban M, Moy R, **Demer JL**. Characterization of ocular tissues using microindentation and hertzian viscoelastic models. *Invest Ophthalmol Vis Sci*. 2011 Jun 1;52(6):3475–82.

Blakeley LR, Chen C, Chen CK, Chen J, Crouch RK, **Travis GH**, Koutalos Y. Rod outer segment retinol formation is independent of abca4, arrestin, rhodopsin kinase, and rhodopsin palmitoylation. *Invest Ophthalmol Vis Sci*. 2011 Jun 1;52(6):3483–91.

Telander DG, Morales SA, Mareninov S, Forward K, **Gordon LK**. Epithelial membrane protein-2 (EMP2) and experimental proliferative vitreoretinopathy (PVR). *Curr Eye Res*. 2011 Jun;36(6):546–52.

**Caprioli J**, Mock D, Bitrian E, Afifi AA, Yu F, **Nouri-Mahdavi K, Coleman AL**. A method to measure and predict rates of regional visual field decay in glaucoma. *Invest Ophthalmol Vis Sci*. 2011 Jul 1;52(7):4765–73. Print 2011 Jun.

Nakatsu MN, Ding Z, Ng MY, Truong TT, Yu F, **Deng SX**. Wnt/ $\beta$ -catenin signaling regulates proliferation of human cornea epithelial stem/progenitor cells. *Invest Ophthalmol Vis Sci*. 2011 Jul 1;52(7):4734–41. Print 2011 Jun.

Kho RC, Al-Obailan M, **Arnold AC**. Bitemporal visual field defects in ethambutol-induced optic neuropathy. *J Neuroophthalmol*. 2011 Jun;31(2):121–6.

**McCannel CA**. Choroidal infarction or cilioretinal artery occlusion in the setting of elevated intracranial pressure due to fulminant idiopathic intracranial hypertension? *J Neuroophthalmol*. 2011 Jun;31(2):194–5.

*Publications are ordered chronologically, starting with the most recent publication.*

**Levinson RD.** Killer immunoglobulin-like receptor genes in uveitis. *Ocul Immunol Inflamm.* 2011 Jun;19(3):192–201.

Lum F, Rapuano CJ, **Coleman AL.** Iterating toward convergence: guideline development and the quality of clinical care. *Ophthalmology.* 2011 Jun;118(6):1015–6.

Tsai A, **Caprioli J,** Shen LQ. Coupled parametric model for estimation of visual field tests based on OCT macular thickness maps, and vice versa, in glaucoma care. *Med Image Anal.* 2011 May 31. [Epub ahead of print]

Radu RA, Hu J, Yuan Q, Welch DL, Makshanoff J, Lloyd M, McMullen S, **Travis GH, Bok D.** Complement system dysregulation and inflammation in the retinal pigment epithelium of a mouse model for Stargardt macular degeneration. *J Biol Chem.* 2011 May 27;286(21):18593–601.

Fu M, Rao R, Sudhakar D, Hogue CP, Rutta Z, Morales S, **Gordon LK,** Braun J, Goodglick L, Wadehra M. Epithelial membrane protein-2 promotes endometrial tumor formation through activation of FAK and Src. *PLoS One.* 2011;6(5):e19945. Epub 2011 May 27.

Supawavej C, **Nouri-Mahdavi K, Law SK, Caprioli J.** Comparison of results of initial trabeculectomy with mitomycin C after prior clear-corneal phacoemulsification to outcomes in phakic eyes. *J Glaucoma.* 2011 May 26. [Epub ahead of print]

Telander DG, Hielweil G, **Schwartz SD,** Butler FK. Diagnostic and therapeutic challenges. *Retina.* 2011 May 23.

**Law SK,** Tamboli DA, Ou Y, **Giaconi JA, Caprioli J.** Development of a resident training module for systematic optic disc evaluation in glaucoma. *J Glaucoma.* 2011 May 19. [Epub ahead of print]

CATT Research Group (**McCannel CA,** Martin DF, Maguire MG, Ying GS, Grunwald JE, Fine SL, Jaffe GJ. Ranibizumab and bevacizumab for neovascular age-related macular degeneration. *N Engl J Med.* 2011 May 19;364(20):1897–908.

**Pineles SL,** Birch EE, Talman LS, Sackel DJ, Frohman EM, Calabresi PA, Galetta SL, Maguire MG, Balcer LJ. One eye or two: a comparison of binocular and monocular low-contrast acuity testing in multiple sclerosis. *Am J Ophthalmol.* 2011 Jul;152(1):133–40. Epub 2011 May 12.

**Demer JL,** Kung J, Clark RA. Functional imaging of human extraocular muscles in head tilt dependent hyperopia. *Invest Ophthalmol Vis Sci.* 2011 May 9;52(6):3023–31.

**McCannel TA,** Burgess BL, Nelson SF, Eskin A, **Straatsma BR.** Genomic identification of significant targets in ciliochoroidal melanoma. *Invest Ophthalmol Vis Sci.* 2011 May 9;52(6):3018–22.

**Law SK,** Sami M, **Piri N, Coleman AL, Caprioli J.** Asymmetric phenotype of Axenfeld-Rieger anomaly and aniridia associated with a novel PITX2 mutation. *Mol Vis.* 2011;17:1231–8. Epub 2011 May 6.

Park HJ, Hampp C, **Demer JL.** Longitudinal study of optic cup progression in children. *J Pediatr Ophthalmol Strabismus.* 2011 May 1;48(3):151–6.

**Caprioli J.** The tube versus trabeculectomy study: why its findings may not change clinical practice? *Am J Ophthalmol.* 2011 May;151(5):742–744.e1.

Wittes J, **Gorin MB,** Mayne ST, McCarthy CS, Sternberg P Jr, Wall M. Letter from the DSMC regarding a clinical trial of lutein in patients with retinitis pigmentosa. *Arch Ophthalmol.* 2011 May;129(5):675; author reply 675–6.

Johnson RD, Nguyen MT, Lee N, **Hamilton DR.** Corneal biomechanical properties in normal, forme fruste keratoconus, and manifest keratoconus after statistical correction for potentially confounding factors. *Cornea.* 2011 May;30(5):516–23.

Bennett DB, Taylor ZD, Tewari P, Singh RS, Culjat MO, Grundfest WS, Sassoon DJ, Johnson RD, **Hubschman JP,** Brown ER. Terahertz sensing in corneal tissues. *J Biomed Opt.* 2011 May;16(5):057003.

**Hubschman JP,** Son J, Allen B, **Schwartz SD,** Bourges JL. Evaluation of the motion of surgical instruments during intraocular surgery. *Eye (Lond).* 2011 Apr 29. [Epub ahead of print]

da Silva Costa RM, Kung J, Poukens V, Yoo L, Tychsen L, **Demer JL.** Intramuscular innervation of primate extraocular muscles: unique compartmentalization in horizontal recti. *Invest Ophthalmol Vis Sci.* 2011 Apr 27;52(5):2830–6.

**Aldave AJ.** The genetics of the corneal dystrophies. *Dev Ophthalmol.* 2011;48:51–66. Epub 2011 Apr 26.

Rao RG, Sudhakar D, Hogue CP, Amici S, **Gordon LK,** Braun J, Notterpek L, Goodglick L, Wadehra M. Peripheral myelin protein-22 (PMP22) modulates alpha 6 integrin expression in the human endometrium. *Reprod Biol Endocrinol.* 2011 Apr 25;9:56.

Armstrong BD, Choi J, López C, Wesener DA, **Hubbell W,** Cavagnero S, Han S. Site-specific hydration dynamics in the nonpolar core of a molten globule by dynamic nuclear polarization of water. *J Am Chem Soc.* 2011 Apr 20;133(15):5987–95.

Lopes VS, Gibbs D, Libby RT, Aleman TS, Welch DL, Lillo C, Jacobson SG, Radu RA, Steel KP, **Williams DS.** The Usher 1B protein, MYO7A, is required for normal localization and function of the visual retinoid cycle enzyme, RPE65. *Hum Mol Genet.* 2011 Jul 1;20(13):2560–70. Epub 2011 Apr 14.

Liu T, Hu AY, Kaines A, Yu F, **Schwartz SD, Hubschman JP.** A pilot study of normative data for macular thickness and volume measurements using cirrus high-definition optical coherence tomography. *Retina.* 2011 Apr 14. [Epub ahead of print]

Vance SK, Freund KB, Wenick AS, Nguyen QD, **Holland GN, Kreiger AE.** Diagnostic and therapeutic challenges. *Retina.* 2011 Apr 9. [Epub ahead of print]

Vishnivetskiy SA, Gimenez LE, Francis DJ, Hanson SM, **Hubbell WL**, Klug CS, Gurevich VV. Few residues within an extensive binding interface drive receptor interaction and determine the specificity of arrestin proteins. *J Biol Chem*. 2011 Jul 8;286(27):24288–99. Epub 2011 Apr 6.

**Nouri-Mahdavi K**, Supawavej C, Bitrian E, **Giaconi JA**, **Law SK**, **Coleman AL**, **Caprioli J**. Patterns of damage in chronic angle-closure glaucoma compared to primary open-angle glaucoma. *Am J Ophthalmol*. 2011 Jul; 152(1):74–80.e2. Epub 2011 Apr 5.

Mokhtarzadeh M, **Casey R**, **Glasgow BJ**. Fluorescein punctate staining traced to superficial corneal epithelial cells by impression cytology and confocal microscopy. *Invest Ophthalmol Vis Sci*. 2011 Apr 5;52(5):2127–35.

Gasymov OK, Abduragimov AR, **Glasgow BJ**. The conserved disulfide bond of human tear lipocalin modulates conformation and lipid binding in a ligand selective manner. *Biochim Biophys Acta*. 2011 May;1814(5): 671–83. Epub 2011 Apr 3.

**Aldave AJ**, Baghdasaryan E, **Miller KM**. Descemet stripping endothelial keratoplasty after Ophtec 311 iris reconstruction lens implantation. *Cornea*. 2011 Apr;30(4):405–8.

Laursen J, **Demer JL**. Traumatic longitudinal splitting of the inferior rectus muscle. *J AAPOS*. 2011 Apr;15(2):190–2. Epub 2011 Apr 3.

Nichols KK, Foulks GN, Bron AJ, **Glasgow BJ**, Dogru M, Tsubota K, Lemp MA, Sullivan DA. The international workshop on meibomian gland dysfunction: executive summary. *Invest Ophthalmol Vis Sci*. 2011 Mar 30; 52(4):1922–9.

Green-Church KB, Butovich I, Willcox M, Borchman D, Paulsen F, Barabino S, **Glasgow BJ**. The international workshop on meibomian gland dysfunction: report of the subcommittee on tear film lipids and lipid-protein interactions in health and disease. *Invest Ophthalmol Vis Sci*. 2011 Mar 30;52(4):1979–93.

Kim M, Hanson SM, Vishnivetskiy SA, Song X, Cleghorn WM, **Hubbell WL**, Gurevich VV. Robust self-association is a common feature of mammalian visual arrestin-1. *Biochemistry*. 2011 Mar 29; 50(12):2235–42.

Spencer KL, Olson LM, Schnetz-Boutaud N, Gallins P, Wang G, Scott WK, Agarwal A, Jakobsdottir J, Conley Y, Weeks DE, **Gorin MB**, Pericak-Vance MA, Haines JL. Dissection of chromosome 16p12 linkage peak suggests a possible role for CACNG3 variants in age-related macular degeneration susceptibility. *Invest Ophthalmol Vis Sci*. 2011 Mar 28;52(3):1748–54.

Hoffelt Z, Fallon S, Wong BA, Lucas B, **Coleman AL**, Mills RP, Wilson R, Mansberger SL. Glaucoma public service announcements: factors associated with follow-up of participants with risk factors for glaucoma. *Ophthalmology*. 2011 Jul;118(7):1327–33. Epub 2011 Mar 24.

Lee MS, Grossman D, **Arnold AC**, Sloan FA. Incidence of nonarteritic anterior ischemic optic neuropathy among patients with and without diabetes. *Ophthalmology*. 2011 May; 118(5):959–63. Epub 2011 Mar 24.

Morales SA, Telander D, Notterpek L, Wadehra M, Braun J, **Gordon LK**. Rewiring integrin-mediated signaling and cellular response with the peripheral myelin protein 22 (PMP22) and epithelial membrane protein 2 (EMP2) components of the tetraspan web. *Invest Ophthalmol Vis Sci*. 2011 Mar 18. [Epub ahead of print]

Biebesheimer JB, Kang TS, Huang CY, Yu F, **Hamilton DR**. Development of an advanced nomogram for myopic astigmatic wavefront-guided laser in situ keratomileusis (LASIK). *Ophthalmic Surg Lasers Imaging*. 2011 May–Jun;42(3):241–7. Epub 2011 Mar 10.

Weiss IK, **Isenberg SJ**, McArthur DL, Del Signore M, McDonald JS. Monitoring the conjunctiva for carbon dioxide and oxygen tensions and pH during cardiopulmonary bypass. *J Extra Corpor Technol*. 2011 Mar;43(1):13–8.

Anastasopoulos E, Topouzis F, Wilson MR, Harris A, Pappas T, Yu F, Koskosas A, Founti P, **Coleman AL**. Characteristics of pseudoexfoliation in the Thessaloniki Eye Study. *J Glaucoma*. 2011 Mar;20(3):160–6.

Burgess BL, Rao NP, Eskin A, Nelson SF, **McCannel TA**. Characterization of three cell lines derived from fine needle biopsy of choroidal melanoma with metastatic outcome. *Mol Vis*. 2011 Feb 25;17:607–15.

**McCannel CA**. Meta-analysis of endophthalmitis after intravitreal injection of anti-vascular endothelial growth factor agents: causative organisms and possible prevention strategies. *Retina*. 2011 Feb 17. [Epub ahead of print]

**Pineles SL**, Liu GT, Acebes X, Arruga J, Nasta S, Glaser R, Pramick M, Fogt F, Roux PL, Gausas RE. Presence of Erdheim-Chester disease and Langerhans cell histiocytosis in the same patient: a report of 2 cases. *J Neuro-ophthalmol*. 2011 Feb 14. [Epub ahead of print]

Yellore VS, Rayner SA, **Aldave AJ**. TGFβ1-induced extracellular expression of TGFβ1p and inhibition of TGFβ1p expression by RNA interference in a human corneal epithelial cell line. *Invest Ophthalmol Vis Sci*. 2011 Feb 9;52(2):757–63.

Gangalum RK, Atanasov IC, Zhou ZH, **Bhat SP**. AlphaB-crystallin is found in detergent-resistant membrane microdomains and is secreted via exosomes from human retinal pigment epithelial cells. *J Biol Chem*. 2011 Feb 4;286(5): 3261–9.

Sharif-Kashani P, **Hubschman JP**, Sassoon D, Kavehpour HP. Rheology of the vitreous gel: effects of macromolecule organization on the viscoelastic properties. *J Biomech*. 2011 Feb 3;44(3):419–23.

Schaal S, **Horwitz J**. Ahuva Dovrat, Ph.D. 1947–2010. *Exp Eye Res*. 2011 Feb 1. [Epub ahead of print]

**Demer JL**, Dushyanth A. T2-weighted fast spin-echo magnetic resonance imaging of extraocular muscles. *J AAPOS*. 2011 Feb;15(1):17–23.

- Mancini R, Khadavi NM, **Goldberg RA**. Nonsurgical management of upper eyelid margin asymmetry using hyaluronic acid gel filler. *Ophthalmol Plast Reconstr Surg*. 2011 Jan–Feb; 27(1):1–3.
- Hong J, Zheng T, Xu J, **Deng SX**, Chen L, Sun X, Le Q, Li Y. Assessment of limbus and central cornea in patients with keratolimbal allograft transplantation using in vivo laser scanning confocal microscopy: an observational study. *Graefes Arch Clin Exp Ophthalmol*. 2011 May;249(5):701–8. Epub 2011 Jan 26.
- McCoy J, **Hubbell WL**. High-pressure EPR reveals conformational equilibria and volumetric properties of spin-labeled proteins. *Proc Natl Acad Sci USA*. 2011 Jan 25;108(4):1331–6.
- McCannel CA**. OCT III imaging of whiplash maculopathy. [letter] *Eye (Lond)*. 2011 Jan 21. [Epub ahead of print]
- McCannel TA**, Wu MY, Burgess BL. Clinical and cytogenetic characteristics of choroidal melanoma in Vietnamese Asians. *Mol Vis*. 2011 Jan 21;17:231–6.
- Warshaviak DT, Serbulea L, Houk KN, **Hubbell WL**. Conformational analysis of a nitroxide side chain in an  $\alpha$ -helix with density functional theory. *J Phys Chem B*. 2011 Jan 20;115(2):397–405.
- Yoo L, Gupta V, Lee C, Kavehpore P, **Demer JL**. Viscoelastic properties of bovine orbital connective tissue and fat: constitutive models. *Biomech Model Mechanobiol*. 2011 Jan 5.
- McCannel CA**, Khan AR. Spectral domain OCT assessment of an epiretinal membrane with axoplasmic stasis from nerve fiber layer traction. *Retinal Cases and Brief Reports: Post Author Corrections*, 2011 Jan 5.
- Zhao C, Yasumura D, Li X, Matthes M, Lloyd M, Nielsen G, Ahern K, Snyder M, **Bok D**, Dunaief JL, LaVail MM, Vollrath D. mTOR-mediated dedifferentiation of the retinal pigment epithelium initiates photoreceptor degeneration in mice. *J Clin Invest*. 2011 Jan 4;121(1):369–83.
- Spaeth GL, Bernstein P, **Caprioli J**, Schiffman RM. Control of intraocular pressure and fluctuation with fixed-combination brimonidine-timolol versus brimonidine or timolol monotherapy. *Am J Ophthalmol*. 2011 Jan;151(1):93–99.
- Yuan A, **Nusinowitz S**, **Sarraf D**. Mizuo-Nakamura phenomenon with a negative waveform ERG. *Br J Ophthalmol*. 2011 Jan;95(1):147–8, 156.
- Devin F, Tsui I, Morin B, Duprat JP, **Hubschman JP**. T-shaped scleral buckle for macular detachments in high myopes. *Retina*. 2011 Jan;31(1):177–80.
- Chiang A, Reddy S, Tsui I, **Hubschman JP**. Vitreous web after pars plana vitrectomy and bevacizumab with fluid-air exchange. *Semin Ophthalmol*. 2011 Jan;26(1):25–7.
- Caprioli J**. IOP: quantity and quality. *Bull Soc Belge Ophtalmol*. 2011; (317):7–10.
- Grunstein LL, **Miller KM**. Astigmatism management at the time of cataract surgery. *Expert Rev Ophthalmol* 2011; 6(3):297–305.
- Sun H**, Kawaguchi R. The membrane receptor for plasma retinol-binding protein, a new type of cell-surface receptor. *Int Rev Cell Mol Biol*. 2011; 288:1–41. Review.
- Hamilton DR**. Consultation section: cataract surgical problem. *J Cataract Refract Surg* 2011; 37(2):423–424.
- Nouri-Mahdavi K**, Javadi ML, Jafarinasab MR. Immunologic corneal graft rejection after administration of topical latanoprost: a report of two patients. *J Ophthalmic Vis Res* 2011; 6(2):127–130.
- Straatsma BR**. Foreword. In *IOL Power*; Hoffer KJ, ed. SLACK Incorporated, New Jersey, xxi, 2011.
- Tewari P, Taylor ZD, Bennett D, Singh RS, Culjat MO, Kealey CP, **Hubschman JP**, White S, Cochran A, Brown ER, Grundfest WS. Terahertz imaging of biological tissues. *Stud Health Technol Inform*. 2011;163:653–7.
- Cheng C, Xia CH, Huang Q, Ding L, **Horwitz J**, Gong X. Altered chaperone-like activity of alpha-crystallins promotes cataractogenesis. *J Biol Chem*. 2010 Dec 24;285(52):41187–93.
- Lai IN, Yellore VS, Rayner SA, D'Silva NC, Nguyen CK, **Aldave AJ**. The utility of next-generation sequencing in the evaluation of the posterior polymorphous corneal dystrophy 1 locus. *Mol Vis*. 2010 Dec 18;16:2829–38.
- O'Neill EC, Danesh-Meyer HV, Kong GXY; Optic Nerve Study Group (**Arnold AC**). Optic disc evaluation in optic neuropathies. *Ophthalmology*. 2011 May;118(5):964–70. Epub 2010 Dec 3.
- Chen J, Woodruff ML, Wang T, Concepcion FA, Tranchina D, **Fain GL**. Channel modulation and the mechanism of light adaptation in mouse rods. *J Neurosci*. 2010 Dec 1;30(48):16232–40.
- Khitri MR, **Demer JL**. Magnetic resonance imaging of tissues compatible with supernumerary extraocular muscles. *Am J Ophthalmol*. 2010 Dec;150(6):925–31.
- Pineles SL**, Ela-Dalman N, Rosenbaum AL, **Aldave AJ**, **Velez FG**. Binocular visual function in patients with Boston type I keratoprotheses. *Cornea*. 2010 Dec;29(12):1397–400.
- Juan T, **Hubschman JP**, Eldredge JD. A computational study of the flow through a vitreous cutter. *J Biomech Eng*. 2010 Dec;132(12):121005.
- Gordon LK**, Bennett JL. Preserving and restoring optic nerve function. *J Neuroophthalmol*. 2010 Dec; 30(4):303–4.
- Bourges JL, **Hubschman JP**, Wilson JY, Prince S, Tsao TC, **Schwartz SD**. Assessment of a hexapod surgical system for robotic micro-macro manipulations in ocular surgery. *Ophthalmic Res*. 2011;46(1):25–30. Epub 2010 Nov 27.

- Charles BA, Conley YP, Chen G, Miller RG, Dorman JS, **Gorin MB**, Ferrell RE, Sereika SM, Rotimi CN, Orchard TJ. Variants of the adenosine A(2A) receptor gene are protective against proliferative diabetic retinopathy in patients with type 1 diabetes. *Ophthalmic Res.* 2011;46(1):1–8. Epub 2010 Nov 19.
- Tsui I, Kaines A, Havunjian MA, Hubschman S, Heilweil G, Prasad PS, Oliver SC, Yu F, Bitrian E, **Hubschman JP**, Friberg T, **Schwartz SD**. Ischemic index and neovascularization in central retinal vein occlusion. *Retina.* Jan 2011; 31(1):105–110. Epub 2010 Nov 17.
- Mackensen F, David F, Schwenger V, Smith LK, Rajalingam R, **Levinson RD**, Austin CR, Houghton D, Martin TM, Rosenbaum JT. HLA-DRB1\*0102 is associated with TINU syndrome and bilateral, sudden-onset anterior uveitis but not with interstitial nephritis alone. *Br J Ophthalmol.* 2011 Jul;95(7): 971–5. Epub 2010 Nov 7.
- Liao JL, Yu J, Huang K, Hu J, Diemer T, Ma Z, Dvash T, **Yang XJ**, **Travis GH**, **Williams DS**, **Bok D**, Fan G. Molecular signature of primary retinal pigment epithelium and stem cell-derived RPE cells. *Hum Mol Genet.* 2010 Nov 1; 19(21):4229–38.
- Weissman BA**. Albert Einstein Medical School Cyberounds: Physiology of Contact Lens Systems, <http://www.cyberounds.com/conf/ophthalmology/index.html>. 2010 Nov. Review.
- Pai VC, **Glasgow BJ**. MUC16 as a sensitive and specific marker for epithelial downgrowth. *Arch Ophthalmol.* 2010 Nov;128(11):1407–12.
- Yeung KK, Forister JF, Forister EF, Chung MY, Han S, **Weissman BA**. Compliance with soft contact lens replacement schedules and associated contact lens-related ocular complications: the UCLA Contact Lens Study. *Optometry.* 2010 Nov;81(11):598–607.
- Yuan A, Kaines A, Jain AK, Reddy S, **Schwartz SD**, **Sarraf D**. Ultra-wide-field and autofluorescence imaging of choroidal dystrophies. *Ophthalmic Surg Lasers Imaging.* 2010 Oct 28;41.
- Habeeb O, Goodglick L, Soslow RA, Rao RG, **Gordon LK**, Schirripa O, Horvath S, Braun J, Seligson DB, Wadehra M. Epithelial membrane protein-2 expression is an early predictor of endometrial cancer development. *Cancer.* 2010 Oct 15;116(20): 4718–26.
- Vaudaux JD, Muccioli C, James ER, Silveira C, Magargal SL, Jung C, Dubey JP, Jones JL, Doymaz MZ, Bruckner DA, Belfort R Jr, **Holland GN**, Grigg ME. Identification of an atypical strain of toxoplasma gondii as the cause of a waterborne outbreak of toxoplasmosis in Santa Isabel do Ivaí, Brazil. *J Infect Dis.* 2010 Oct 15;202(8):1226–33.
- Lopes VS, Jimeno D, Khanobdee K, Song X, Chen B, **Nusinowitz S**, **Williams DS**. Dysfunction of heterotrimeric kinesin-2 in rod photoreceptor cells and the role of opsin mislocalization in rapid cell death. 2010 Dec; 21(23):4076–88. Epub 2010 Oct 6.
- Marathe OS, Wu J, Lee SP, Yu F, Burgess BL, Leu M, **Straatsma BR**, **McCannel TA**. Ocular response of choroidal melanoma with monosomy 3 versus disomy 3 after iodine-125 brachytherapy. *Int J Radiat Oncol Biol Phys.* 2010 Oct 5. [Epub ahead of print]
- Benesch JL, Aquilina JA, Baldwin AJ, Rekas A, Stengel F, Lindner RA, Basha E, Devlin GL, **Horwitz J**, Vierling E, Carver JA, Robinson CV. The quaternary organization and dynamics of the molecular chaperone HSP26 are thermally regulated. *Chem Biol.* 2010 Sep 24;17(9):1008–17.
- Pineles SL**, Avery RA, Liu GT. Vitamin B12 optic neuropathy in autism. *Pediatrics.* 2010 Oct;126(4):e967–70. Epub 2010 Sep 20.
- Holland E, Lane S, Horn JD, Ernest P, Arleo R, **Miller KM**. The AcrySof Toric intraocular lens in subjects with cataracts and corneal astigmatism: a randomized, subject-masked, parallel-group, 1-year study. 2010 Nov; 117(11):2104–11. Epub 2010 Sep 16.
- Otto EA, Hurd TW, Airik R, Chaki M, Zhou W, Stoetzel C, Patil SB, Levy S, Ghosh AK, Murga-Zamalloa CA, van Reeuwijk J, Letteboer SJ, Sang L, Giles RH, Liu Q, Coene KL, Estrada-Cuzcano A, Collin RW, McLaughlin HM, Held S, Kasanuki JM, Ramaswami G, Conte J, Lopez I, Washburn J, Macdonald J, Hu J, Yamashita Y, Maher ER, Guay-Woodford LM, Neumann HP, Obermüller N, Koenekoop RK, Bergmann C, Bei X, Lewis RA, Katsanis N, Lopes V, **Williams DS**, Lyons RH, Dang CV, Brito DA, Dias MB, Zhang X, Cavalcoli JD, Nürnberg G, Nürnberg P, Pierce EA, Jackson PK, Antignac C, Saunier S, Roepman R, Dollfus H, Khanna H, Hildebrandt F. Candidate exome capture identifies mutation of SDCCAG8 as the cause of a retinal-renal ciliopathy. *Nat Genet.* 2010 Oct;42(10):840–50. Epub 2010 Sep 12.
- Shah SP, **Hubschman JP**, Bourges JL, Hu AY, **Schwartz SD**. Limited long term efficacy of intravitreal anti-VEGF pharmacotherapy in sarcoidosis complicated by peripapillary choroidal neovascular membranes. *Acta ophthalmologica.* 2010 Sep;88/6 (e243–4): 1755–3768.
- Demer JL**. Paretic side/normal side ratios of cross-sectional areas of the superior oblique muscle vary largely in idiopathic superior oblique palsy. *Am J Ophthalmol.* 2010 Sep;150(3):441; author reply 441–2.
- McCannel TA**, Burgess BL, Rao NP, Nelson SF, **Straatsma BR**. Identification of candidate tumor oncogenes by integrative molecular analysis of choroidal melanoma fine-needle aspiration biopsy specimens. *Arch Ophthalmol.* 2010 Sep;128(9):1170–7.
- Goldberg RA**. The shift toward minimally invasive aesthetic facial rejuvenation. *Arch Ophthalmol.* 2010 Sep;128(9):1200–1.
- Ortube MC, Dipple K, Setoguchi Y, Kawamoto HK Jr, **Demer JL**. Ocular manifestations of oblique facial clefts. *J Craniofac Surg.* 2010 Sep; 21(5):1630–1.

Ortube MC, Lazareff J, Vinters HV, **Velez FG**. Orbital ectopic brain tissue in Aicardi syndrome. *J Craniofac Surg*. 2010 Sep;21(5):1551–3.

Ussa F, Coco RM, Paulo JD, Ayllon W, Cuadrado R, **Sarraf D**, Margo CE, Friedman SM. Diagnostic and therapeutic challenges. *Retina*. 2010 Sep;30(8):1311–5.

**Glasgow BJ**, Gasymov OK. Focus on molecules: tear lipocalin. *Exp Eye Res*. 2011 Apr;92(4):242–3. Epub 2010 Aug 21.

Van Eps N, Anderson LL, Kisselev OG, Baranski TJ, **Hubbell WL**, Marshall GR. Electron paramagnetic resonance studies of functionally active, nitroxide spin-labeled peptide analogues of the C-terminus of a G-protein alpha subunit. *Biochemistry*. 2010 Aug 17;49(32):6877–86.

Pavone ME, Reierstad S, **Sun H**, Milad M, Bulun SE, Cheng YH. Altered retinoid uptake and action contributes to cell survival in endometriosis. *J Clin Endocrinol Metab*. 2010 Nov;95(11):E300–9. Epub 2010 Aug 11.

**Coleman AL**, Yu F, Ensrud KE, Stone KL, Cauley JA, Pedula KL, Hochberg MC, Mangione CM. Impact of age-related macular degeneration on vision-specific quality of life: Follow-up from the 10-year and 15-year visits of the Study of Osteoporotic Fractures. *Am J Ophthalmol*. 2010 Nov;150(5):683–91. Epub 2010 Aug 5.

**Pineles SL**, Avery RA, Moss HE, Finkel R, Blinman T, Kaiser L, Liu GT. Visual and systemic outcomes in pediatric ocular myasthenia gravis. *Am J Ophthalmol*. 2010 Oct;150(4):453–459.e3. Epub 2010 Aug 1.

Fu M, Maresh EL, Soslow RA, Alavi M, Mah V, Zhou Q, Iasonos A, Goodglick L, **Gordon LK**, Braun J, Wadehra M. Epithelial membrane protein-2 is a novel therapeutic target in ovarian cancer. *Clin Cancer Res*. 2010 Aug 1;16(15):3954–63.

Hollander DA, **Giacconi JA**, **Holland GN**, Yu F, **Caprioli J**, **Aldave AJ**, **Coleman AL**, **Casey R**, **Law SK**, **Mondino BJ**. Graft failure after penetrating keratoplasty in eyes with Ahmed valves. *Am J Ophthalmol*. 2010 Aug;150(2):169–78.

**Pineles SL**, Ela-Dalman N, Zvansky AG, Yu F, Rosenbaum AL. Long-term results of the surgical management of intermittent exotropia. *J AAPOS*. 2010 Aug;14(4):298–304.

Calderón JL, Bazargan M, Sangasubana N, Hays RD, Hardigan P, **Baker RS**. A comparison of two educational methods on immigrant Latinas breast cancer knowledge and screening behaviors. *J Health Care Poor Underserved*. 2010 Aug;21(3 Suppl):76–90.

Khadavi NM, Lew H, **Goldberg RA**, Mancini R. A case of acute reversible Charles Bonnet syndrome following postsurgical unilateral eye patch placement. *Ophthal Plast Reconstr Surg*. 2010 Jul–Aug;26(4):302–4.

**Sarraf D**, Reddy S, Chiang A, Yu F, Jain A. A new grading system for retinal pigment epithelial tears. *Retina*. 2010 Jul–Aug;30(7):1039–45.

Mattan NS, Ghiani CA, Lloyd M, Matalon R, **Bok D**, Casaccia P, de Vellis J. Aspartoacylase deficiency affects early postnatal development of oligodendrocytes and myelination. *Neurobiol Dis*. 2010 Nov;40(2):432–43. Epub 2010 Jul 14.

Weinreb RN, Zangwill LM, Jain S, Becerra LM, Dirkes K, Piltz-Seymour JR, Cioffi GA, Trick GL, **Coleman AL**, Brandt JD, Liebmann JM, Gordon MO, Kass MA; OHTS CSLO Ancillary Study Group. Predicting the onset of glaucoma: the confocal scanning laser ophthalmoscopy ancillary study to the Ocular Hypertension Treatment Study. *Ophthalmology*. 2010 Sep;117(9):1674–83. Epub 2010 Jul 14.

**Pineles SL**, Wilson CA, Balcer LJ, Slater R, Galetta SL. Combined optic neuropathy and myelopathy secondary to copper deficiency. *Surv Ophthalmol*. 2010 Jul 8;55(4):386–92.

Silveira C, Vallochi AL, Rodrigues da Silva U, Muccioli C, **Holland GN**, Nussenblatt RB, Belfort R, Rizzo LV. *Toxoplasma gondii* in the peripheral blood of patients with acute and chronic toxoplasmosis. *Br J Ophthalmol*. 2011 Mar;95(3):396–400. Epub 2010 Jul 3.

Bitrian E, **Caprioli J**. Pars plana anterior vitrectomy, hyaloido-zonulectomy, and iridectomy for aqueous humor misdirection. *Am J Ophthalmol*. 2010 Jul;150(1):82–87.

Oliver SC, Leu MY, DeMarco JJ, Chow PE, Lee SP, **McCannel TA**. Attenuation of iodine 125 radiation with vitreous substitutes in the treatment of uveal melanoma. *Arch Ophthalmol*. 2010 Jul;128(7):888–93.

Weiss JS, Wiaux C, Yellore V, Raber I, Eagle R, Mequio M, **Aldave A**. Newly reported p.Asp240Asn mutation in UBIAD1 suggests central discoid corneal dystrophy is a variant of Schnyder corneal dystrophy. *Cornea*. 2010 Jul;29(7):777–80.

Wilson JT, Tsao TC, **Hubschman JP**, **Schwartz SD**. Evaluating remote centers of motion for minimally invasive surgical robots by computer vision. 2010 IEEE/ASME International Conference on Advanced Intelligent Mechatronics. 2010; 1413–1418.

Singh RS, Tewari P, Bourges JL, **Hubschman JP**, Bennett DB, Taylor ZD, Lee H, Brown ER, Grundfest WS, Culjat MO. Terahertz sensing of corneal hydration. *Conf Proc IEEE Eng Med Biol Soc*. 2010; 3021–4.

**Miller KM**. Consultant for: Chang DF. Intraoperative floppy iris syndrome. *Focal Points*. San Francisco: American Academy of Ophthalmology, 2010. Volume XXVIII, Number 11.

Sergott RC, Wheless JW, Smith MC, **Arnold AC**. Evidence-based review of recommendations for visual function testing in patients treated with vigabatrin. *Neuro-Ophthalmology* 2010;34:20–35.

Al-Obailan M, Kerr S, **Arnold AC**. Focal superonasal optic nerve hypoplasia. *Neuro-Ophthalmology* 2010;34:297–300.

Jain AK, Collen J, Kaines A,  
**Hubschman JP, Schwartz SD.** Short-  
duration focal pattern grid macular  
photocoagulation for diabetic macular  
edema: four-month outcomes. *Retina.*  
2010;30(10):1622–1626.

Amesbury EC, **Miller KM.** Approach  
to the surgical correction of astigma-  
tism at the time of cataract surgery. In  
Henderson BA, Gills JP. *A Complete  
Surgical Guide for Correcting Astig-  
matism: An Ophthalmic Manifesto.*  
Thorofare, NJ: SLACK Incorporated,  
2010.

**Velez FG,** Eckstein L, Oh I, Ela-Dalman  
N. Pediatric Ophthalmology. In *Video  
Textbook of Basic Surgeries in Oph-  
thalmology*; Agarwal A, Jacob S, eds.  
SLACK Incorporated, 2010.

**Velez FG,** Ela-Dalman N, Rosenbaum  
AL. Strabismus. In *Color Atlas of Oph-  
thalmology*, 2nd edition; Agarwal A, ed.  
Thieme Medical Publishers, 2010.







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Development Office  
100 Stein Plaza  
University of California, Los Angeles  
Los Angeles, California 90095-7000  
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