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Message from the Chair

Today, the USC Eye Institute is building on the USC Department of Ophthalmology’s 40-year history of excellence with an ambitious vision for the future. We are fortunate to serve one of the largest, most diverse populations in the world. Our focus is, as always, compassionate care for our patients, education of the best and brightest professionals, and discoveries that will lead to the end of blindness.

We are privileged to announce that *US News & World Report* has ranked the USC Eye Institute at Keck School of Medicine of USC as the ninth best ophthalmology hospital in the nation for 2015-2016. These are very competitive rankings and we are truly grateful to our colleagues whose votes placed us in the top 10. We will continue to work hard to earn their confidence and that of our patients.

In this issue of *Up Close*, we are delighted to share with you a glimpse of our research advancements, which include a new initiative exploring the relationship between blindness and the brain, highlights from our 40th Anniversary Symposium of the USC Department of Ophthalmology, as well as our global contributions.

With over 135 faculty members, the USC Eye Institute is committed to developing groundbreaking treatments in our relentless pursuit to prevent and end blindness, and restore sight to those suffering from vision loss.

*Rohit Varma, MD, MPH*
Professor and Chair
USC Department of Ophthalmology, Keck School of Medicine of USC
Director, USC Eye Institute

*Left to Right: Keck School of Medicine of USC Dean Carmen A. Puliafito, MD, MBA; Director of USC Eye Institute, Chair of the USC Department of Ophthalmology Rohit Varma, MD, MPH; USC President C. L. Max Nikias, PhD, and Senior Vice President and Chief Executive Officer of Keck Medicine of USC Thomas E. Jackiewicz, MPH*
Awards & Honors

USC EYE INSTITUTE RECEIVES TOP ACCOLADES

Super Doctors

We are proud to announce that 10 of our USC Eye Institute physicians have been selected for inclusion in the prestigious Super Doctors list of Los Angeles. Super Doctors recognizes outstanding physicians in their subspecialties based on peer recognition and professional achievement.

Stallard Award

A. Linn Murphree, MD, clinical professor of ophthalmology, was the recipient of the prestigious Stallard Award at the International Society of Ocular Oncology in Paris. The award recognizes his research achievements in identifying the genetic mutation causing retinoblastoma.

USC Ophthalmology Residency Program Ranked in Top 10 by Doximity

The USC Eye Institute is proud to announce that the USC Ophthalmology Residency Program was ranked ninth nationwide by Doximity.

“We are committed to providing a learning environment that transforms our residents into well-informed, confident and highly-skilled physicians and surgeons,” says Vivek Patel, MD, associate professor of clinical ophthalmology and residency program director.

“It is a privilege to be a part of a residency program that is dedicated to creating future leaders in ophthalmology. This program offers access to world-renowned faculty, cutting-edge research and an unparalleled clinical and surgical experience. Our residents are all exceptional individuals and we are incredibly grateful for the opportunity to train them,” says Jesse Berry, MD, assistant professor of clinical ophthalmology and associate residency program director.

Ophthalmology Residents Receive Los Angeles County 2015 Consultant Service of the Year Award

In a Keck School of Medicine of USC residency-wide vote, USC Eye Institute ophthalmology residents were voted Consultant Service of the Year by the Department of Emergency Medicine, Los Angeles County + USC Medical Center, for their consistent responsiveness and dedication. Their positive attitude earned the ophthalmology service an outstanding reputation among residents and faculty in the Department of Emergency Medicine.

USC Eye Institute Resident Receives Nesburn Award for Best Research

Second-year resident Philip Storey, MD, MPH, received the 2015 Dr. Henry and Lilian Nesburn Award for the best eye research paper by a resident. Storey’s research project, “The Role of Topical Antibiotic Prophylaxis to Prevent Endophthalmitis After Intravitreal Injection,” won the $1,000 prize for its far reaching health and medical cost saving implications.

In addition, current third-year resident Dagny Zhu, MD, received an honorable mention for her research.
Research Focus

BLINDNESS AND THE BRAIN: A MULTI-DISCIPLINARY INITIATIVE

Scientists Investigate the Relationship Between Human Connectomes (Brain Mapping) and Eye Diseases to Create the Next Generation of Sight Restoration Therapies

Vision researchers at USC will bridge the gap between basic science and translational research to better understand how blindness affects the brain. Given the variability in brain structure and function between individuals, a given eye disease may impact each patient differently. Scientists will combine advanced retinal imaging, focusing on diseased retinal tissue, with the brain-mapping techniques developed in the Human Connectome Project. Novel yet robust analytical methods will be used to better understand brain-eye connections in blinding diseases that may ultimately lead to the development of new treatments.

Vision researchers from four major institutions — USC Eye Institute, USC Dornsife College of Letters, Arts and Sciences, USC Mark and Mary Stevens Neuroimaging and Informatics Institute and the University of Pennsylvania — received a $4 million grant from the National Eye Institute, a part of the National Institutes of Health. This collaboration includes USC’s Bosco Tjan, PhD, principal investigator, co-investigators, Steven Cen, PhD, Meng Law, MBBS, and Yonggang Shi, PhD, five USC Eye Institute faculty members (see below), as well as Geoffrey Aguirre, PhD, and Jessica I.W. Morgan, PhD, from the University of Pennsylvania.
A Novel Stem Cell-Based Therapy for Dry Age-Related Macular Degeneration

Virginia Knepper Doyle was recently diagnosed with dry age-related macular degeneration (AMD). She immediately sought treatment for her condition but had already lost the ability to recognize faces. “I see people in my daily life that I probably know, but I cannot tell who they are,” says Doyle when describing what it is like to have AMD.

What is AMD?

Age-related macular degeneration is one of the nation’s leading causes of blindness in the elderly, with more than two million people affected today.

AMD is characterized by a loss of retinal pigment epithelial (RPE) cells, which are located in the retina in the back of the eye. The retina contains photoreceptors (light sensitive cells), which capture images and send them to the brain. Ultimately, the loss of RPE cells leads to the death of the photoreceptors. AMD can progress to cause significant impairment in the ability to read, recognize faces or drive.

There are two forms of AMD: wet and dry. The majority of patients have dry AMD, where deposits form under the retina, leading to deterioration of the light-sensing cells. To date, there are no treatments for dry AMD.

“Every day, I see patients who have gone blind or are going blind, who need therapy. We are incredibly excited that we have developed a minimally invasive therapy that can give hope back to those suffering from this devastating disease,” says Mark Humayun, MD, PhD, co-director of the USC Eye Institute and co-inventor of Argus II, the first FDA-approved retinal prosthesis.

Humayun, along with David Hinton, MD, USC professor of pathology, neurological surgery, ophthalmology and associate dean for vision science, received a $38 million grant from the California Institute for Regenerative Medicine (CIRM) to develop a stem cell-based therapy for AMD. Through a cross-disciplinary approach, they assembled a team of experts comprised of four major schools and institutions including the USC Eye Institute, University of California, Santa Barbara, California Institute of Technology (Caltech) and City of Hope to execute this interdisciplinary initiative.

Scientists from USC Eye Institute and UC Santa Barbara focused their efforts on the root cause of dry AMD — the degeneration and loss of RPE cells. “The most ideal strategy in developing a treatment for AMD would be to regenerate RPE cells. They are also surgically accessible,” says Hinton. Scientists in the Hinton lab pioneered a methodology differentiating RPE from stem cells, purifying and growing them as confluent monolayers.

Stem Cell-Based Therapy

This treatment takes regenerated RPE cells and seeds them onto a synthetic membrane designed by Caltech scientists and engineers, which is then placed underneath the diseased portion of the retina. The implanted RPE scaffold (manufactured by City of Hope) is localized to support and replenish photoreceptors, which would help restore and prevent further vision loss in patients with dry AMD.

The stem cell therapy successfully decreased progression of retinal degeneration in animal studies that were conducted by Biju Thomas, PhD, USC assistant professor of research in ophthalmology.

“This stem cell-based therapy represents cutting-edge technology in several different fields and provides a real chance at improving the lives of millions of patients with disabling vision loss,” says Amir Kashani, MD, PhD, USC assistant professor of clinical ophthalmology and the principal investigator of the upcoming phase I clinical trial.

Hope for AMD Patients

“I am worried about my grandchildren getting this, and I think stem cell research is the hope for them,” says Virginia Knepper Doyle, dry AMD patient (quote provided by CIRM).
Clinical Focus

PROSE TREATMENT BRINGS RELIEF TO CANCER SURVIVOR

“I had lost all hope until I came to the USC Eye Institute. I’m excited about the PROSE treatment because it will take care of my pain so that I can live a normal life.”

- Nicole Schultz, USC Eye Institute patient

Nicole Schultz, a two-time cancer survivor, has been suffering from the devastating effects of a condition known as ocular graft-versus-host disease (GvHD).

Medical and Ocular History

Schultz was diagnosed with ocular GvHD following her second bone marrow transplant, which she received during her cancer treatment. Serious complications can arise in patients with GvHD, when donor cells from transplants attack connective tissue of the patient or host. For Schultz, GvHD manifested in her eyes, which were no longer able to produce tears and resulted in painful flare-ups. For years she sought treatment for dry eye, visiting many doctors, who prescribed various eye drops and even punctal plugs to increase tears and moisture in her eyes. Schultz’s life changed dramatically, since she was required to administer drops multiple times a day to diminish the pain she experienced. She says she was on the verge of giving up hope when it was suggested to visit the USC Eye Institute to try a unique contact lens treatment option known as prosthetic replacement of the ocular surface ecosystem (PROSE).

After meeting Schultz for the first time, Gloria Chiu, OD, FAAO, who is trained in PROSE treatment, immediately knew that she could help relieve Schultz’s symptoms.

PROSE treatment, a non-surgical procedure, is offered to patients who suffer from serious corneal conditions and ocular surface diseases. PROSE therapy reduces symptoms, supports healing and improves vision through the use of a prosthetic scleral device that is tailored for each individual. Schultz is also using non-preserved artificial tears with PROSE therapy to enhance comfort and fit.

Recent studies have demonstrated that patients who received this pioneering treatment experienced a notable improvement in their quality of vision and quality of life as a result.

The USC Eye Institute is the third of 12 sites in the nation to offer PROSE technology to our patients. Chiu is one of only two West Coast eye care providers to offer PROSE treatment.

Outcome

“It is a privilege to be able to provide Nicole with a treatment that can quite simply change her life. These custom devices help to improve her vision, comfort and assist in the healing of her ocular surface,” says Chiu.

For more information on PROSE treatment, please visit USCEYE.ORG/PROSE

Join the USC Eye Institute in its quest to preserve, protect and restore the gift of sight by making your tax-deductible donation today. Thank you for your support! GIVETO.USC.EDU/EYE
In celebration of the 40th anniversary of the USC Department of Ophthalmology, the USC Eye Institute hosted an academic symposium at the Huntington Library, Art Collections and Botanical Gardens. A capacity crowd of almost 400 eye care professionals participated in the event. Guests enjoyed a full day of presentations from all subspecialties of ophthalmology.

The full-day symposium was opened by USC President C. L. Max Nikias, PhD.

“The Department of Ophthalmology at USC quickly emerged as a trailblazer in research, innovation, training and treatment. To my USC colleagues at the Department of Ophthalmology: congratulations on reaching this magnificent milestone,” says Nikias.

Other participants included Dean of Keck School of Medicine of USC Carmen A. Puliafito, MD, MBA, and Thomas E. Jackiewicz, MPH, senior vice president and CEO, Keck Medicine of USC. Local and international guests spoke at the event and received medals in recognition of their valuable contributions to vision research.

Stanley Chang, MD, the K.K. Tse and Ku Teh Ying Professor of Ophthalmology at Columbia University, was the recipient of the inaugural USC Eye Institute Laureate Award. The award represents the highest honor bestowed by the USC Eye Institute on an individual in recognition of academic achievements in the preservation, protection and restoration of vision. Chang was honored for his remarkable work and pioneering efforts in the field of vitreoretinal surgery and the impact of his contributions and his leadership in the US and around the world.

Distinguished Speakers

Stanley Chang, MD
K. K. Tse and Ku Teh Ying Professor of Ophthalmology at Columbia University, Medical Center Recipient of the USC Eye Institute Laureate Award

Kathryn A. Colby, MD, PhD
Professor and Chair, Department of Ophthalmology and Visual Science, The University of Chicago

Pravin U. Dugel, MD
Clinical Professor, USC Eye Institute; Keck School of Medicine of USC; Managing Partner of Retinal Consultants of Arizona and Founding Member of the Spectra Eye Institute

Jonathan J. Dutton, MD, PhD
Professor Emeritus of Ophthalmology and Ophthalmic Oncology at University of North Carolina

Jeffrey Goldberg, MD, PhD
Professor and Chair, Department of Ophthalmology, Stanford University School of Medicine

Farhad Hafezi, MD, PhD
Professor of Ophthalmology, University of Geneva, Switzerland; Medical Director, The ELZA Institute AG, Zurich Switzerland; Adjunct Clinical Professor of Ophthalmology, USC Eye Institute

Jonathan M. Holmes, MD
Joseph E. and Rose Marie Green Professor of Visual Sciences and Professor of Ophthalmology; Former Chair, Department of Ophthalmology, College of Medicine, Mayo Clinic

Robert K. Maloney, MD, MA (Oxon) Director, Maloney Vision institute; Clinical Professor of Ophthalmology, UCLA-David Geffen School of Medicine

Carmen A. Puliafito, MD, MBA
Dean, Keck School of Medicine of USC

Arthur W. Toga, PhD
Director, USC Mark and Mary Stevens Neuroimaging and Informatics Institute

Robert N. Weinreb, MD
Director, Shiley Eye Institute; Distinguished Professor and Chair of Ophthalmology; Distinguished Professor of Bioengineering; Director, Hamilton Glaucoma Center at the University of California, San Diego

M. Roy Wilson, MD, MS
President, Wayne State University
NEW FACULTY RECRUITS IN MULTIPLE OPHTHALMOLOGY SUBSPECIALTIES

We are delighted to announce the successful recruitment of six new faculty members from some of the finest institutions across the country. Our physicians’ contributions focus on three major areas: providing expertise to patients in need of specialized care, cutting-edge interdisciplinary research and delivering world-class training to medical students, residents and fellows. We welcome faculty in multiple areas of subspecialty, including vitreoretinal surgery and retinal disease, ocular inflammation, cataract, cornea and external diseases, glaucoma and neuro-ophthalmology.

The USC Eye Institute welcomes Sarah Hamm-Alvarez, PhD, vice chair of basic research. Hamm-Alvarez is recognized for advancing the field of vision science, publishing numerous papers and reviews in areas such as trafficking in epithelial cells, lacrimal gland and ocular surface and advanced drug delivery.

“I’m excited to contribute my research and administrative experience to building out basic and translational science research programs and working with our tremendously talented faculty, residents, fellows and students. I look forward to many shared opportunities for scientific discussion, discovery and collaboration that will help us identify areas of research and clinical synergy and new opportunities,” says Hamm-Alvarez.

Sarah Hamm-Alvarez, PhD
Professor of Ophthalmology, Pharmacology and Pharmaceutical Sciences
Vice Chair of Basic Research, Department of Ophthalmology
Associate Dean of Basic and Translational Research, Keck School of Medicine of USC

USC EYE INSTITUTE NEW CLINICAL FACULTY RECRUITS

Hossein Ameri, MD, PhD
Assistant Professor of Clinical Ophthalmology
Specialty: Vitreoretinal Surgery and Retinal Disease

Grace Richter, MD, MPH
Assistant Professor of Clinical Ophthalmology
Specialties: Glaucoma, Cataract

Damien C. Rodger, MD, PhD
Assistant Professor of Clinical Ophthalmology
Specialties: Vitreoretinal Surgery and Retinal Disease, Uveitis and Ocular Inflammation

Julie Schallhorn, MD, MS
Assistant Professor of Clinical Ophthalmology
Specialties: Cataract, Cornea and External Diseases, Uveitis and Ocular Inflammation

Dara M. West, MD
Assistant Professor of Clinical Ophthalmology and Neurology
Specialty: Neuro-Ophthalmology and Adult Strabismus
At the University of Southern California, we have a long and proud history of training many of the world’s leaders in ophthalmology and vision science. Our students, residents and fellows are exceptional individuals who have chosen to train with us, and we are incredibly grateful for the opportunity.

The USC Eye Institute provides a unique residency and fellowship training experience. Training is provided at four hospitals: USC Eye Institute at Keck Medical Center of USC, Children’s Hospital Los Angeles (CHLA), Los Angeles County + USC Medical Center (LAC+USC), and the VA Downtown Los Angeles Medical Center.

Most notably, LAC+USC provides an unparalleled environment for world-class, direct, hands-on training in both clinical and surgical sub-specialties of ophthalmology. Staffed by leading experts in the field, fellows and residents have the extraordinary opportunity to directly interact with patients, see a wide range of conditions and deliver exceptional care to those who are suffering.

RESIDENTS 2015-16

1ST YEAR

- Mica Bergman, MD, PhD
- Lilangi Ediriwickrema, MD, MS
- Esther Lee Kim, MD
- Sun Young Lee, MD, PhD
- Benjamin Xu, MD, PhD
- Dagny Zhu, MD
- Jion L. Do, MD, PhD
- Stavros Moysidis, MD
- Billy Pan, MD
- Kelly Rue, MD
- Grace Shih, MD
- Philip Storey, MD, MPH
- Walid F. Abdallah, MD, PhD
- On-Tat Lee, MD
- Natasha Naik, MD
- Ananth Sastry, MD
- Brandon Wong, MD
- Arman Zaman, MD

2ND YEAR

3RD YEAR

FELLOWS AND CLINICAL INSTRUCTORS

- Hassan Abdul Aziz, MD
  Research Fellow
- Diana Chao, MD
  Glaucoma
- Meena George, MD
  Vitreoretinal Surgery
- Lee R. Katzman, MD
  Cornea
- Jacqueline Mandell, MD
  Medical Retina
- Ehsan Mozayan-Irshahni, MD
  Medical Retina
- Emile Sharifi, MD
  Vitreoretinal Surgery
- Jeffrey J. Tan, MD
  Vitreoretinal Surgery

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The USC Eye Institute is proud of our specialists who volunteered at the 2015 Special Olympics World Summer Games in July, an event involving more than 6,500 athletes representing 165 countries. Lernik Torossian, OD, FAAO, and Veronica Isozaki, OD, FAAO, provided ophthalmic services to many of the participants.

Torossian and Isozaki participated in the Opening Eyes service as part of the Healthy Athletes Initiative offered during the Los Angeles Games. Volunteer students, physicians and opticians provided thousands of eye exams and glasses that were donated by corporate sponsors. The prescription glasses were manufactured on location so they were ready for the athletes before they travelled home. Athletes who did not need corrective lenses received sunglasses.

“Volunteering for the Special Olympics was such a rewarding opportunity because we were able to provide care for such a diverse group of people, some of whom may not have access to health care in their home countries. As volunteers, we were able to hear the stories directly from the athletes about their accomplishments at the Games, see them proudly wearing their gold, silver and bronze medals, and personally congratulate them for reaching such a high level of competition,”Isozaki says about the experience at the Los Angeles Games.

“It was a privilege to be a part of the Special Olympics. We’ll never forget their stories of perseverance, joy and success. Truly an unforgettable experience.”

- Lernik Torossian, OD, FAAO
USC EYE INSTITUTE PHYSICIANS JOIN EARTHQUAKE RELIEF EFFORTS IN NEPAL

Keck School of Medicine of USC, in partnership with the Retinal Consultants of Arizona (RCA), travelled to Nepal to provide earthquake relief efforts and also created the USC Eye Institute/RCA Global Relief Fund to support the efforts abroad.

Nepal suffered a devastating earthquake in April, 2015, that took the lives of more than 9,000 people and injured approximately 23,000. With a magnitude of 7.8, the impact of the earthquake was far-reaching, affecting India, Bangladesh and China. On May 12, 2015, a massive 7.3 aftershock in Nepal killed hundreds and injured thousands more.

Keck School of Medicine of USC Dean Carmen Puliafito, MD, MBA, with support from Rohit Varma, MD, MPH, director, USC Eye Institute, and Mark Humayun, MD, PhD, co-director, USC Eye Institute, were instrumental in sending a six-member medical trauma team to aid the relief efforts.

“Pravin U. Dugel, MD, a USC alumnus and former resident, and colleague from the Keck School of Medicine of USC, established the fund, which has raised thousands of dollars for the relief efforts.

The trauma team of USC/RCA medical professionals, including Dugel, travelled to Nepal to provide medical and surgical care, food distribution and shelter for those in need. The trauma team successfully completed a five-day life-saving mission that provided relief to those who had lost their homes and loved ones.

Dugel says, “Our roles were largely undefined until we landed in Kathmandu and saw the extent of devastation. We immediately travelled several hours to the most affected rural areas to join medical teams and help deliver disaster relief efforts. Today, the joint fund created by our affiliation continues to help the people in Nepal. In addition to food and medical supplies, building materials are being delivered and assembled to house thousands of families whose homes and communities were destroyed, and who are facing an active monsoon season.”

The USC Eye Institute is grateful to have the opportunity to assist in the recovery and rebuilding of Nepal. On behalf of all of us, we thank you for your generous gifts to support the USC Eye Institute/RCA Global Relief Fund.
GRAND ROUNDS
Every Tuesday, 5:30pm
Healthcare Center 4 Conference Room, Third Floor
1450 San Pablo St, Los Angeles, CA 90033

USC EYE INSTITUTE RECEPTION AT AAO
Saturday, November 14, 2015
SLS Hotel, Congo Room, Las Vegas

SPECIALTY CONFERENCES
Saturdays, 8:00am–12:00pm
Healthcare Center 4 Conference Room, Third Floor
December 5, 2015 RETINA & UVEITIS
March 12, 2016 GLAUCOMA
April 9, 2016 NEW DEVICES/TECHNOLOGY IN OPHTHALMIC CARE

RESIDENT POTPOURRI CASE PRESENTATIONS
Saturday, January 9, 2016, 8:00am–12:00pm
Healthcare Center 4 Conference Room, Third Floor

INAUGURAL USC OCULAR ONCOLOGY CONFERENCE
Saturday, January 16, 2016
Healthcare Center 4 Conference Room, Third Floor

USC EYE INSTITUTE ANNUAL SYMPOSIUM
Friday, June 17, 2016, 8:00am–5:00pm
The Huntington Library
Steven S. Koblik Education and Visitor Center