A MESSAGE FROM THE DEAN

“I am pleased to welcome Rohit Varma, MD, MPH, as Chair of the Illinois Eye and Ear Infirmary, University of Illinois at Chicago Department of Ophthalmology & Visual Sciences and Associate Dean for Strategic Planning at the UIC College of Medicine. Dr. Varma is a highly accomplished physician-scientist and translational investigator who studies the development of eye diseases in minority populations and examines novel biological, genetic and lifestyle factors related to the risk of developing eye diseases. He is an expert on changes in the optic nerve in glaucoma and on new imaging techniques in the early diagnosis of glaucomatous optic nerve damage. Under his leadership, the Department of Ophthalmology & Visual Sciences begins a new era of clinical and research excellence.”

Dimitri T. Azar, MD, MBA | Dean, College of Medicine
A MESSAGE FROM THE DEPARTMENT CHAIR

“I am deeply honored by the trust that Dean Azar has placed in me to lead the Illinois Eye and Ear Infirmary, UIC Department of Ophthalmology & Visual Sciences to a new era of educational, clinical and research excellence. It is a privilege to be a part of the Illinois Eye and Ear Infirmary, known for generations as an outstanding center of clinical expertise and innovative research.

“Among our key priorities is strengthening the resources available for resident education — evidenced by the dedication of substantial space for the new Resident Education Center that will house a state-of-the-art surgical simulator. Together with our clinical faculty, we will build a structured surgical curriculum that spans the entire three years of residency, beginning with early exposure to ophthalmic surgery through the Eyesi™ surgical simulator, wet labs and lectures and discussions with our most senior and renowned surgeons. By the time our residents graduate, they will have experience as primary surgeons in all of our subspecialties.

“This educational experience requires investment of considerable time and energy on the part of our faculty. With their invaluable commitment, the Illinois Eye and Ear Infirmary will continue to be ranked among the most competitive residency programs in the country.

“In ophthalmology education, as in practice, the technologies that advance our ability to diagnose, treat and manage blinding eye diseases require substantial monetary investment. We are grateful to the College of Medicine for the program to fund measurable improvement in medical education. We are indebted to our alumni and donors for their continued support and interest as we guide the Infirmary to a new era.”

Rohit Varma, MD, MPH | Professor and Department Chair

Rohit Varma, MD, MPH

Clinical Fellowship in Glaucoma
Doheny Eye Institute
University of Southern California

Residency in Ophthalmology
Wilmer Ophthalmological Institute
The Johns Hopkins University
School of Medicine

Research Fellowship in Glaucoma
Wills Eye Hospital

Internship
Union Memorial Hospital

Masters in Public Health
The Johns Hopkins Bloomberg School of Public Health

Medical Degree
Maulana Azad Medical College
University of Delhi
**LIGHT-SENSITIVE MOLECULE**

Signaling retinal cells to respond to light

UIC vision scientists and chemists recently created a light-sensitive molecule that can stimulate cells of the retina — a photochemical on-off switch that someday may lead to new treatments for degenerative eye diseases such as age-related macular degeneration (AMD).

Diseases such as AMD destroy photoreceptor cells that sense light and start the visual process. However, other retinal cell types, while not normally photosensitive, often remain healthy. “We asked ourselves, ‘Could we make healthy retinal cells responsive to light and bypass dead photoreceptor cells?’” says David Pepperberg, PhD, Searls-Schenk Professor of Ophthalmology and Director of the Photoreceptor Research Laboratory.

Remarkably, the answer seems to be “yes.” The team’s focus: a neurotransmitter known as GABA (gamma-aminobutyric acid) that activates a receptor protein involved in visual signaling within the retina. The researchers synthesized new compounds built upon the anesthetic propofol, a small molecule that binds to and regulates GABA receptors.

The new molecule is known as MPC088. As light of different wavelengths strikes it, MPC088 changes shape and functions essentially as a light switch for the GABA receptor. “It’s the outcome of many attempts,” says Dr. Pepperberg, Principal Investigator of the study, which won funding from the National Eye Institute.

The UIC chemists led by Karol Bruzik, PhD, Professor, College of Pharmacy, soon realized they had produced a molecule with broader implications. That sparked a collaboration with scientists at the University of California, Los Angeles (UCLA), led by Thomas S. Otis, PhD, Department of Neurobiology, who are exploring MPC088’s potential to reduce epileptic seizures.

Turning the light switch off is also critical. Next for the UIC team is an attempt to program in “temporal tuning” and make the molecule revert back within a certain timeframe — essential for future clinical applications.

The team also wants to incorporate a targeting component — a cellular GPS — to boost MPC088’s affinity for reaching the appropriate receptor site. “It’s a major challenge,” says Dr. Pepperberg, “but we’re excited to be pursuing what we believe is a promising approach.”

The findings were published online in November in the journal *Nature Communications*. The paper’s co-first authors were Lan Yue, PhD, and Michal Pawlowski, PhD, UIC; and Shlomo S. Dellal, PhD, UCLA.

In addition to the National Institutes of Health, the study has received key support from the Daniel F. and Ada L. Rice Foundation, the Arnold and Mabel Beckman Initiative for Macular Research, American Health Assistance Foundation, Hope for Vision, Research to Prevent Blindness, and the UIC Center for Clinical and Translational Science.
Corneal stem cells, pictured here, are used to grow cells in the laboratory to study their protein expression and cell-to-cell communications that contribute to their function.

CORNEAL STEM CELLS

Transplants open a window on the future

For 43-year-old Shawn Doyle, gradually losing the sight in his right eye was like looking out on the world “through a dirty window or wax paper.”

His worsening vision — caused by a deficiency of corneal limbal stem cells — made it harder to do his work as a motorcycle and boat mechanic, enjoy outdoor sports or even drive.

Then, Ali Djalilian, MD, told him about a limbal stem cell transplant. “I was intrigued and excited,” says Shawn.

“Over the last 10 years, we’ve been learning more and more about the concept of limbal stem cell transplants and improving on the outcomes,” says Dr. Ali Djalilian, Associate Professor and Director, Corneal Epithelial Stem Cell Biology and Tissue Engineering Laboratory.

Limbal stem cells are found at the edge of the cornea. Injuries and genetic or immunological diseases can destroy the surface and, with it, limbal stem cells. The result is visual impairment or even blindness. The problem can’t be solved with a standard cornea transplant, which contains no stem cells.

Surgeons harvest the cells and surrounding environment from various sources: the patient’s other eye, if healthy; a living relative; and cadaver tissue, the source of Shawn’s new stem cells.

Dr. Djalilian’s latest innovation is the use of a biological glue made from proteins in the blood clotting system to secure the transplant without any sutures. The glue has been used in other forms of surgery, but not limbal transplants. The result is increased comfort for the patient and less inflammation.

The program’s approach to medical management after transplant also “distinguishes us from other centers,” says Dr. Djalilian. That includes careful use of immunosuppressants to control rejection. Often, specialists in glaucoma, oculoplastics and organ transplant join the team, as needed.

Since his stem cell transplant in November, Shawn’s eyesight has been improving daily. He can read a newspaper without the aid of glasses or contact lenses. “It’s been a great miracle,” he says.

Working in the lab, Dr. Djalilian and his colleagues are hoping for another breakthrough: finding a way to replace limbal stem cells with a patient’s own cells from elsewhere in the body. Using a patient’s own cells would eliminate the problems of transplant rejection and immunosuppression.

So far, the investigators have succeeded in getting other cells to change into limbal cells — but the switch is temporary. One theory is that the cells need the entire corneal environment to mimic limbal cells. “That’s the main focus of our research now,” says Dr. Djalilian, “recreating that environment, ‘the limbal stem cell niche.’”
Severe eye injuries in children frequently affect multiple parts of the eye and require skill sets different from those more commonly applied in adults. So it makes sense that the best outcomes can be achieved when a team of subspecialists work together to pool their expertise.

The Illinois Eye and Ear Infirmary has developed an innovative team approach to treating children with traumatic eye injuries.

Within two days of being treated for an open globe injury, a trauma patient in the Pediatric Ophthalmology clinic is examined by Iris Kassem, MD, PhD; Javaneh Abbasian, MD (pediatric glaucoma specialist); or Genie Bang, MD (pediatric cataract specialist), to identify potential complications, establish early treatment for amblyopia and coordinate subspecialty care.

Felix Chau, MD, and Yannek Leiderman, MD, PhD, provide the team’s retinal expertise, specializing in such problems as bleeding inside the eye, retinal detachment, dislocation of the lens, and foreign objects such as metal or wood entering the eye from trauma.

“Sometimes it is evident from the outset that the injury involves the back part of the eye,” notes Dr. Leiderman. “Other times, it is difficult to assess the extent of the damage because of the presence of blood within the eye or injury to the cornea or lens.”

A multidisciplinary team approach is equally important in such cases, so any injury can be treated appropriately in the operating room, when all of the surgeons having the necessary expertise are available.

Most children see a retinal specialist, whether or not the original trauma caused a retinal problem, because visualization of the retina is critical before the development of traumatic cataracts — a frequent occurrence in children with an eye injury.

Aisha Traish, MD, who specializes in pediatric cornea, often collaborates in the patient’s care to optimize corneal healing. “Each child has the most comprehensive care from the start,” says Dr. Traish. “Our common goal is the best possible long-term visual function.”

Ahmad A. Aref, MD, is brought in if glaucoma develops. Ellen Shorter, OD, or Timothy McMahon, OD, provide consultation on contact lenses after a child’s initial surgery. “Successful fitting of a contact lens is critical in children who have had ocular trauma and are now aphakic (have no lens in the eye), to provide the best possible vision and to prevent amblyopia,” notes Dr. Shorter.

“By working closely with other members of the team, we can provide excellent care,” says Dr. Leiderman, “but we also have the opportunity to learn from one another, to discuss novel approaches, and to explore new concepts pioneered in other fields.”
An artificial cornea is proving to be the gift of sight for many people with complicated conditions for whom traditional corneal tissue transplants have either failed or have a poor prognosis.

The Illinois Eye and Ear Infirmary is home to the largest artificial cornea program of its kind in the Midwest, with more than 120 patients receiving implants to date. The program uses the Boston Keratoprothesis (k-pro), the most popular artificial cornea worldwide.

“We promote an interdisciplinary approach, with our patients able to take advantage of our large department and expertise,” says Soledad Cortina, MD, Assistant Professor and Director of the Artificial Cornea Program. As a cornea surgeon, she heads a team that includes experts in glaucoma, retina, oculoplastics, contact lenses and pediatric ophthalmology, as needed.

Initially, the artificial cornea — which received U.S. Food and Drug Administration approval in 1992 — was reserved for people with blindness in both eyes. Recently, less severe cases have realized excellent results. “I have patients who have been blind for decades and with this artificial cornea their vision and the quality of their lives has significantly improved,” says Dr. Cortina.

Bobby Wallace, 47, is one of those beneficiaries. At age 23, he suffered a devastating loss of sight from a chemical burn to both eyes. With his left eye, he could read large type close to his face. His right eye — the more severely injured, with significant scarring — only perceived light.

Artificial cornea

Over time, he had a limbal (corneal) stem cell transplant and cornea transplant in his left eye using tissue from a human donor. Both procedures, performed at another institution, failed. In 2011, Bobby came to the Illinois Eye and Ear Infirmary, where reconstructive surgery restored the surface of his right eye.

Then, Dr. Cortina implanted the artificial cornea in the place of Bobby’s damaged natural cornea. When the k-pro’s three parts are assembled, it has the shape of a collar button. Because its central portion is made of plastic, the k-pro eliminates the issue of rejection that occurs in human tissue transplants.

When the patch came off Bobby’s right eye following surgery, he saw his wife, Sheila, for the first time. Later, on the way home, he was able to read billboards. “Being able to see has given me such a boost in my self-confidence,” says Bobby.

Before the implant, Bobby couldn’t enjoy such ordinary pleasures as reading his Bible or watching a movie. He says, “It sounds simple, but it’s a big blessing to me.”

“I have patients who have been blind for decades and with this artificial cornea their vision and the quality of their lives has significantly improved.”

–DR. SOLEDAD CORTINA
Aaron Jackson
RETURN TO INDEPENDENCE

“My eyes are still improving, but I’ve come so far. I no longer need anyone to help me get to the store or take me to work.” —AARON JACKSON

Aaron Jackson has been an employee of UIC since 2000 and currently serves as the Assistant Facilities Manager for the East Campus. So when he began experiencing vision problems a few years ago, he naturally sought out the expertise of doctors at the Illinois Eye and Ear Infirmary, who were able to diagnose and treat his worsening glaucoma. Surgery was performed to stabilize the glaucoma and remove cloudy cataracts, but Aaron had permanent vision loss as a result of irreparable damage to the optic nerve that occurred before his diagnosis. In November 2010, he began seeing Joan Stelmack, OD, MPH, FAAO, Director of UIC’s Low Vision Service, to learn how to function with diminished vision.

The Department of Ophthalmology & Visual Sciences established the Low Vision Service to provide rehabilitation services for patients with permanent vision loss. Dr. Stelmack works with a low vision optometrist and a certified low vision therapist to provide patients with clinical examinations and visual skills assessments. Patients with low vision are introduced to technology and techniques that enhance their remaining sight and give them new visual skills to tackle the routine tasks of everyday life and put them on the path to independence.

“I saw Dr. Stelmack for corrective therapy,” explains Aaron. “She taught me how to recalibrate my eye movement, coordination and balance.”

“Vision rehabilitation was needed to increase independence in activities of daily living and to explore vocational and recreational adaptations,” notes Dr. Stelmack.

According to Dr. Stelmack, the treatment goals for Aaron included being able to use a computer for work and recreation, the capability to read small print such as time cards and mail and the ability to navigate safely in poor lighting conditions. Aaron was prescribed low vision devices to enhance his remaining vision, including reading glasses, glasses for distance and a magnifying glass to see small print.

Most patients who undergo vision rehabilitation therapy achieve improved visual function. Unfortunately, patients are not always aware of all the options that may improve their visual function after serious eye surgery.

Today, Aaron only sees Dr. Stelmack when functional problems arise. But those issues occur less frequently now. “My eyes are still improving, but I’ve come so far,” says Aaron. “I no longer need anyone to help me get to the store or take me to work.”

Along with his independence, Aaron has returned to his favorite pastime: photography.

Aaron Jackson with Dr. Joan Stelmack
AMD TREATMENT

Novel drug delivery combo addresses macular degeneration

Age-related macular degeneration (AMD) affects more than 1.75 million people in the U.S. With a rapidly aging population, experts expect this number to reach 3 million by 2020.

There is no cure. However, new treatments have emerged to offer improved prognosis, based on the discovery that a group of proteins in the body called vascular endothelial growth factors (VEGF) play a role in formation of abnormal blood vessels that damage the retina.

Anti-VEGF inhibitors have been shown to prevent vision loss and improve clarity of vision in patients with neovascular or “wet” AMD, the more severe form. However, frequent injections are required, anywhere from once to several times a month, depending on the patient.

Jennifer I. Lim, MD, Professor and Director of the Retina Service, thinks she may have an answer in a new combination of drugs and a novel slow-release, long-lasting drug delivery system.

The drug delivery system, Verisome® from Icon BioSciences, Inc., is a biodegradable liquid that may be combined with other drugs and then injected into the eye using a standard needle. Dr. Lim recently completed a small pilot study that combined Lucentis® (ranibizumab), a leading anti-VEGF drug, with Verisome using triamcinolone acetonide (TA), an anti-inflammatory drug that helps prevent blood vessel growth. The TA along with the Verisome was delivered as a single injection into the eye. The combined product coalesces into a single sphere — essentially a “steroid ball,” explains Dr. Lim.

In the pilot study completed in December, 10 participants received an injection of Lucentis as a baseline treatment, then, a week later, an injection of the liquid steroid ball.

The biodegradable vehicle provides controlled, extended drug release for up to one year. “The combination of this drug ball with an initial Lucentis injection enables us to decrease the number of Lucentis injections needed,” says Dr. Lim. “We are the only place in the world to use this delivery system with this combination therapy.”

The number of additional Lucentis injections needed was cut in half by the treatment used in the pilot study. There were few side effects and no serious adverse ocular events.

Retina Service physician-scientists are actively exploring other innovative AMD solutions, including Eylea® (aflibercept), the newest anti-VEGF drug approved by the U.S. Food and Drug Administration. UIC also is a participant in the nationwide Age-Related Eye Disease Study 2 (AREDS2), which is looking at the effectiveness of a combination vitamin A and Omega-3 fish oils, along with other formulas, for slowing the progression of AMD.

Liquid-release drug delivery system in eye

“We are the only place in the world to use this delivery system with this combination therapy.” – DR. JENNIFER LIM
**New treatment for retinal disease**

Drug discovery efforts within the Retina Chemical Genomics Lab, directed by Michael Grassi, MD, Assistant Professor, recently accelerated. In work published earlier this year in *Investigative Ophthalmology & Visual Science* (doi: 10.1167/iovs.11-8928), Qing Chang, MD, PhD, Research Assistant Professor, and Dr. Grassi developed a cell-based model for retinal degenerative key pathways that are responsible for cell death in photoreceptors, the light-sensing cells of the retina. This model has subsequently been leveraged by Dr. Chang and Dr. Grassi to screen a U.S. Food and Drug Administration-approved compound library of more than 1,000 compounds to identify new treatments for retinal disease. Work is underway to better define the mechanism of action for a novel compound identified in this screen, which could potentially represent a new treatment for retinal disease.

“For those individuals suffering from retinal disease, these studies reveal the exciting advantages of high-throughput screening platforms, which are accelerating our ability to introduce new treatments in the clinic,” states Dr. Grassi.

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**Testing efficacy of donated corneas**

The Illinois Eye and Ear Infirmary is among the sites participating in the Cornea Preservation Time Study (CPTS), a $12.3 million study to determine whether the supply of donated corneas can meet anticipated growth in demand over the next 20 to 30 years.

Elmer Tu, MD, Associate Professor and Director of the Cornea Service, serves as site director of the study, which will determine whether corneas transplanted up to two weeks after donor death work as well as corneas transplanted up to one week after donor death.

The growth of the U.S. population which accounts for the majority of corneal transplants — patients 50 and older — is projected to increase from about 99 million in 2010 to about 133 million by 2030, according to the U.S. Census Bureau. Many cornea transplant specialists are concerned about an adequate supply of donated corneas. One approach to solving the projected increase is to prove that donated corneas up to two weeks old achieve the same outcomes for patients as those that are transplanted a week after donor death.

According to Dr. Tu, most cornea surgeons use corneas up to one week after the death of the donor, even though the U.S. Food and Drug Administration permits corneas to be stored in preservation medium at refrigerator temperature up to two weeks after donor death. Corneas older than two weeks are used overseas for transplants without significant problems reported, he adds. “We want to see if the length of time the donor cornea is kept in the preservation liquid before the transplant affects the likelihood of the transplant being successful.”

Participants will be followed for three years after transplant to see if there are differences in transplant success or in the number of transplanted endothelial cells (the layers of cells that line the undersurface of the cornea) on the corneas that were preserved for seven days or less compared to those...
preserved between eight and 14 days. “There is no reason to believe there is any greater risk for transplant failure with either preservation time group,” Dr. Tu said.

The study is headed by Jonathan Lass, MD, Chair of the Case Western Reserve Department of Ophthalmology & Visual Sciences.

Building biomarker database

Yannek Leiderman, MD, PhD, Assistant Professor and Director of the Vitreoretinal Microsurgery Laboratory, is implementing a system of large-scale sample collection, including storage of whole blood, DNA, RNA, plasma and serum, as well as a clinical database that will be utilized to investigate the relationship of biomarkers with health and diabetic retinopathy status and progression.

The project is in collaboration with a major effort by Joe G.N. “Skip” Garcia, MD, Vice President for Health Affairs at the University of Illinois, to build a broad range of biomarkers for disease. The UI BioBank will provide a database for the correlation of clinical samples with phenotypic data for the purpose of investigative analyses and to provide access to study data for future protocols and investigations.

The patient cohort for Dr. Leiderman’s study includes outpatients in the Illinois Eye and Ear Infirmary who have diabetes or conditions associated with proliferative retinopathies and patients that have opted to participate in the UI BioBank and have undergone blood collection in the course of their clinical care. He and research colleague Bin Liu, PhD, are coordinating sample collection with the Retina Service physicians.
NEW TECHNOLOGIES

Staying state-of-the-art

With the acquisition of the Eyesi™ surgical simulator, the Illinois Eye and Ear Infirmary made a million-dollar investment in new technologies for teaching, patient care and research. “As a world-class program, we must employ state-of-the-art technologies in every aspect of our mission,” states Rohit Varma, MD, MPH, Professor and Chair, Department of Ophthalmology & Visual Sciences. “My commitment is to ensure we have the resources to stay on the leading edge of biomedical technologies in ophthalmologic care and vision research.”

Training enhanced by surgical simulator

Acquisition of the Eyesi™ surgical simulator is the core component of infrastructure and design upgrades in a state-of-the-art Resident Education Center. Residents and Fellows can practice intraocular surgery in a close-to-real setting, available on demand at all times.

The Eyesi surgical simulator provides direct feedback to the surgeon and clearly indicates any areas of deficiency, allowing for self-assessment and improvement.

“Tools such as the Eyesi and wet and dry lab kits for surgical training give us a distinct advantage in preparing our residents for ophthalmology practice,” says William Mieler, MD, Professor and Vice Chair for Education. “The long-term impact will be markedly beneficial to our patients.”

Powerful laser scanning microscope aids research

A state-of-the-art Zeiss Confocal Laser Scanning Microscope (LSM) 710 is giving Department investigators advanced imaging capabilities, including time-lapsed imaging to study cell interactions and migration.

The high-resolution microscope was purchased last spring with support from The Cless Family Foundation, the Core Grant for Vision Research from the National Eye Institute, and Research to Prevent Blindness, Inc.

Ali Djalilian, MD, uses the Zeiss LSM 710 to study the changes that take place in corneal cells during wound healing. “The impressive quality of the images allows us to see fine changes over time, something we had previously been unable to do.”

J.H. Robert Chang, PhD, and Kyu Yeon Han, PhD, employ the Zeiss LSM 710 to track green fluorescent protein molecules in ocular cells. They are trying to detail aberrant corneal blood and lymphatic vessel growth after injury and infection, the main causes of corneal transplant rejection and blindness.

“The LSM 710 microscope allows us to achieve a fundamental understanding of these mechanisms,” says Dr. Chang. “The results will provide therapeutic intervention to prevent and treat devastating, blinding eye diseases.”

Together with the imaging facility’s live-cell microscopy system, the new microscopy system is a valuable resource for generating new basic science knowledge “that is essential to improve understanding and treatment of various eye diseases,” says Mahnaz Shahidi, PhD, Vice Chair for Research and Director of the Applied Physics Laboratory.
Laser-assisted surgery benefits teaching mission

For **Joann Kang, MD**, Co-Chief Resident at Illinois Eye and Ear Infirmary, performing cataract procedures using the latest advance in laser-assisted surgery is “a confidence builder.”

With the Alcon LenSx® Laser System as a surgical tool, Dr. Kang can hone her skills at the beginning of her learning curve. “As someone in training, parts of the surgery can be more difficult than others. The laser can assist at those points, making the rest of the surgery easier and ensuring consistency from procedure to procedure.”

The Illinois Eye and Ear Infirmary is the first academic center in the Midwest to offer the laser-assisted technology to patients and the first and only center to provide access to the LenSx system to its residents and fellows. The technology, used for years in refractive surgery, recently won U.S. Food and Drug Administration approval for cataract surgery.

“We’re changing the traditional thinking,” says **Jose de la Cruz, MD**, a member of the Cornea Service and an early enthusiast for laser-assisted surgery. Typically, medical centers reserve new technologies for experienced faculty. “Having access to the LenSx system allows our residents and fellows to be more creative and to progress in their skills that much more quickly,” he explains.

The system offers decided advantages for patients as well, including precision, consistency and less time in the operating room.

The laser provides real-time, 3D images to guide the procedure and allows the surgeon to make an incision at the micron level. It also offers more stability and accuracy as the surgeon creates a perfect circular hole to enter, cut the lens and remove it, then center the intraocular lens. In traditional cataract surgery — which still represents the bulk of training for residents — a manual blade is used.

The laser sends energy at an extremely short burst known as a femtosecond. For comparison, a femtosecond is to a second what a second is to 31.7 million years. “We haven’t done clinical studies yet, but in our surgeries we have noticed less post-surgery inflammation and a quicker recovery,” says Dr. de la Cruz, Assistant Professor and Director of the Millennium Park Eye Center, the university’s downtown satellite clinic.

Cornea and Refractive Surgery Fellow **Samuel Lee, MD**, appreciates the opportunity the laser system gives him to “think more innovatively.” From his point-of-view, the LenSx levels the playing field for cataract surgeons.

“We’re the younger generation of ophthalmologists who will be doing cataract surgery over the next 30 years,” says Dr. Lee. “It’s nice that this technology isn’t just reserved for senior surgeons. We’re the ones who will use it for years to come.”
On Christmas Day 2011, Tyler Burress was accidentally punched in his eye while playfully wrestling with a cousin. According to Tyler’s mother, Dana, the blow did not leave a bruise and did not seem to be a cause for concern. However, a few days later Tyler told his mother that he was seeing things floating in his right eye. Shortly after, he told her that he could not see anything at all except for blackness.

Tyler’s parents took him to see a local eye doctor in their hometown of Danville, Illinois. He was sent to a retinal specialist who determined that Tyler had sustained blunt trauma to his right eye, which quickly developed into a large retinal tear. To treat his complicated condition, Tyler was referred to Yannek Leiderman, MD, PhD, at UIC’s Retina Service in Chicago.

“These types of complex retinal detachments can be challenging to repair, particularly in children,” says Dr. Leiderman. He adds that while surgically repairing a retinal detachment is a common procedure performed by retina surgeons, maintaining the health of the eye and achieving good visual outcomes is more difficult in children and young adults. This was the primary reason Tyler’s retinal specialist referred him to the experts at the Illinois Eye and Ear Infirmary. Upon examining Tyler, Dr. Leiderman recommended immediate surgery. Despite the fast turn of events, Tyler’s parents were unfazed.

“I was confident we were in the best place,” says Dana. The following day, Dr. Leiderman performed eye surgery (pars plana vitrectomy) to reattach Tyler’s retina.

“The surgical procedure was a success,” says Dr. Leiderman. “And while Tyler has not regained perfect vision, he has made great progress and continues to improve.”

“Tyler’s eye is healing very well,” says Dana, noting that there is no scar tissue. The toughest part for Tyler was keeping his head down for two weeks to maintain the gas bubble behind his eye that held his retina in place.

“His vision is getting better,” says Dana, “although he sees wavy lines that may or may not go away.” Gradual vision improvement is typical following the surgical treatment of retinal detachment involving the critical central part of the retina.

In the meantime, Tyler, an active 18-year old, is considering community college to pursue other interests until he finds out whether his vision will improve enough to join the Marines.

“Tyler is a success story because we were able to restore his vision and help a young man continue to achieve his goals,” says Dr. Leiderman. He credits the skills of the entire UIC team who assisted in the treatment to save Tyler’s sight.

“It is a privilege to work as part of a team, including surgeons, anesthesiologists, nurses, technicians and many others here at UIC that allow us to care for the most challenging and complex cases,” adds Dr. Leiderman.
John H. Panton, MD, Res ’57, an ophthalmologist who completed his residency at the Illinois Eye and Ear Infirmary, made a $250,000 pledge to establish the Panton Family Professorship, which will help the Department of Ophthalmology & Visual Sciences recruit and retain top faculty.

Matching funds from the Raymond Nester Sweeney, MD, Med ’68, estate will complete the $500,000 needed for an endowed professorship. Dr. Sweeney was a radiologist who spent most of his career practicing in Terre Haute, Indiana. Grateful for his education at the College of Medicine, Sweeney made an estate gift of nearly $20 million, which has created an endowment fund to provide student scholarships and to establish endowed professorships, such as the Panton Family Professorship. The Panton Family Professorship will be fully funded in 2016.

Dr. John Panton is joined in making the gift by his wife, Mary Karakourtis Panton, his two sons, Peter J. Panton, MD, Res ’86, and Robert W. Panton, MD, Res ’90, and his daughter, Elizabeth Panton Karkazis, OD, an optometrist. They are in practice together at the Panton Eye Center in Elmwood Park, Illinois.

The Panton family has a long history with the University of Illinois, both the Chicago and Urbana campuses.

Dr. Peter Panton describes his family’s education pedigree as “a journey from Ellis Island to the Ivy League, with all roads passing through the University of Illinois.” His grandfather, Angelos Karakourtis, emigrated from Greece to the United States, passing through Ellis Island and arriving in Chicago in 1913. He lived in Chicago’s old Greektown, which adjoins UIC’s East Campus, and learned to read and write English at Hull House. Angelos’s daughter, Mary Karakourtis, was a member of the first class to enter the University of Illinois at Chicago in 1946 and attended classes there until 1948 when she transferred to the Urbana campus to complete her BA. She and Dr. John Panton, who graduated from the University of Athens School of Medicine and completed his residency in ophthalmology at Presbyterian Hospital of the City of Chicago, a teaching affiliate of the University of Illinois College of Medicine, were married in 1955. Their sons, Peter and Robert, both attended Brown University as undergraduates and Brown University School of Medicine; both did their ophthalmology residencies at the Infirmary. Daughter Elizabeth graduated from the University of Illinois, Urbana before earning her OD at the Illinois College of Optometry. Christina Panton, Peter’s daughter, has started medical school at Brown.
Mary Karakourtis Panton would often tell her children that “Excellence is permanent.” This was how she paraphrased her husband, who was fond of quoting Aristotle: “We are what we repeatedly do. Excellence, then, is not an act, but a habit.” The success of the Panton Eye Center and the family’s history of giving to the Department of Ophthalmology suggest they took her advice to heart. Dr. John Panton speaks warmly of the doctors who trained him, in particular Dr. William F. Hughes and Dr. Peter C. Kronfeld. Pointing to the facility in which he and his children have practiced for the past 20 years, he said, “All that we have here, all that we do here, is because of the good teachers at the Infirmary.”

“You want to give back to the institutions that made your success possible,” said Dr. Peter Panton. “We want to help the place where we learned ophthalmology.”

The Panton family’s history of giving to the Department of Ophthalmology dates back to the 1980s when they contributed to the effort to build the Lions of Illinois Eye Research Institute. In the past decade, they contributed to endowed professorships for Drs. Morton F. Goldberg, Joel Sugar and Jacob T. Wlensky. In 2007, Peter and Robert Panton joined with the children of Arnold D. Curnyn, MD, Res ’65 (Kimberlee M. Curnyn, MD, Res ’95), the late Harold Q. Kirk, MD, Res ’53 (Ann Kirk Williams, MD, Res ’87 and her husband Douglas P. Williams, MD, Res ’87), and Karl E. Ticho, MD, Res ’57 (Benjamin H. Ticho, MD, Res ’91), to establish the Four Fathers Lecture in Ophthalmology.

The Panton family also established a professorship in Modern Greek Studies at UIC. They have given generously to the National Hellenic Museum, located near UIC in Chicago’s Greektown.

“We are so grateful to the Panton family for their generosity as loyal alumni of the Illinois Eye and Ear Infirmary,” says Dr. Rohit Varma, Department Chair.

“We are what we repeatedly do. Excellence, then, is not an act, but a habit.” – ARISTOTLE
Since 1995, when Gerhard (Gary) Cless first came to the Illinois Eye and Ear Infirmary for follow-up care after surgery to treat a macular hole, he has taken an active interest in the Department of Ophthalmology & Visual Sciences’s research, providing extraordinary support through a variety of gifts.

A native of Stuttgart, Germany, Gary is Executive Vice President and co-founder of Zebra Technologies Corporation, a global leader in Barcode and Radio Frequency Identification (RFID) technology. He holds several U.S. patents related to the RFID industry. He and his wife, Ruth, formed The Karl Cless Family Foundation, named for his father, through which they direct their philanthropic activities.

In 2000, Gary donated a $50,000 high-powered confocal microscope, only the third of its kind installed in the United States at that time, and provided $70,000 for two research studies about macular holes. In 2001 he donated a Zeiss Optical Coherence Tomographer, imaging technology that allows doctors to better evaluate the disease progression and monitor treatment of patients. In 2012, support from The Cless Foundation made it possible to acquire the latest confocal microscope technology, a Zeiss laser scanning confocal system.

In between, Gary has generously supported the Department’s research and education program, providing support for acquisition of other advanced microscopy for research, recruitment of retina faculty, clinical studies in diseases of the retina and macula, and for a retina fellow. Prior gifts established an endowed lecture, the Gerhard Cless Endowed Lecture in 2003, given at the annual retina meeting, and the Cless Best of the Best medal; Ruth and Gerhard (Gary) Cless in 2003, given at the annual retina meeting, and the Cless Best of the Best Award in 2008, which recognizes the best quality talk given at the annual meetings of the American Association of Ophthalmology and the Association for Research and Ophthalmology.

The Cless Family Professorship in Ophthalmology is the latest gift from The Cless Family Foundation. The endowed professorship will be fully funded in 2013, with matching support from the College of Medicine’s Sweeney fund.

“Gary and Ruth Cless have given more than $2 million to help the Department,” says Dr. Rohit Varma, Ophthalmology Chair. “We are deeply grateful for their contributions to vision research, which has impact well beyond our institution.”
Although he was just a teen at the time, Chuck Barsky vividly remembers his father, Albert, struggling for years with failing eyesight. A serious flare-up the day after his brother’s wedding caused Albert to lose most of his eyesight for the second time within 10 years. A trip to the local eye doctor in the Chicago suburbs confirmed that his case was extremely serious and required advanced attention. Albert was referred to the Department of Ophthalmology & Visual Sciences at UIC.

“We consider ourselves fortunate to have been close to UIC, one of the leading eye institutes,” notes Chuck. Albert met with Jacob Wilensky, MD, Professor of Ophthalmology. Dr. Wilensky diagnosed Albert with acute glaucoma. After 25 years and more than 20 surgeries, including cornea transplants, Albert has regained some of his sight. According to Chuck, he can see roughly 25 percent out of one eye and has pinpoint vision in the other.

“We give all the credit in the world to the doctors at UIC,” says Chuck. “We would never have dreamed that my father could one day see well enough to shoot baskets with his grandson.”

Today, Albert regularly sees Dr. Wilensky and Joel Sugar, MD. Albert typically returns to UIC for treatment every three to six months.

Chuck is grateful to the Department’s doctors for partially recovering his father’s eyesight, and feels that it is important to give back. “We owe so much to them,” he notes. Chuck earmarks his donation (which is matched by his employer, Discover Financial Services) for the Jacob Wilensky, MD, Endowed Glaucoma Research Fund, which is used for glaucoma research and the Department’s teaching program.

“We hope that our donation can help someone else,” says Chuck.

To learn about ways to give, email ophgift@uic.edu or call (312) 996-6591.
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Endowed gifts support valuable academic activity in the Department of Ophthalmology & Visual Sciences. We are proud to highlight just a few of the achievements of our endowed faculty and important endowed programs from the 2011–12 academic year.

**Endowed Lectures**

- **Morton F. Goldberg, MD, Endowed Lecture**
  “The Demise of the Disc Margin and Cup to Disc Ratio in Glaucoma”
  
  **Claude F. Burgoyne, MD**
  Oregon Health and Sciences University
  Delivered June 29, 2012, at the 36th Annual Alumni / Resident Day

- **Four Fathers Lecture**
  “Manpower Needs in Ophthalmology”
  **Joel Sugar, MD**
  Illinois Eye and Ear Infirmary at UIC
  Delivered June 29, 2012, at the 36th Annual Alumni / Resident Day

- **Jose S. Pulido, MD, Endowed Lecture**
  “The Evolution of Surgery for Keratoconus”
  **Mark J. Mannis, MD**
  UC Davis Eye Center
  Delivered June 29, 2012, at the 36th Annual Alumni / Resident Day

- **Samuel F. Schoenberg, MD, Memorial Lecture**
  “Unlocking Mysteries in Measurements of the Retinal Nerve Fiber Layer”
  **David S. Greenfield, MD**
  Bascom Palmer Eye Institute
  Delivered May 16, 2012, at the Annual Glaucoma Symposium

- **Jacob T. Wilensky, MD Lecture**
  “Imaging in Glaucoma”
  **Teresa C. Chen, MD**
  Massachusetts Eye & Ear Infirmary
  Delivered May 16, 2012, at the Annual Glaucoma Symposium

- **Gerhard Cless Endowed Lecture**
  “Defining and Describing New Medical Retina Diseases such as the White Dot Syndromes”
  **Lee Jampol, MD**
  Northwestern Feinberg School of Medicine
  Delivered March 30, 2012, at the 5th Annual Retina Symposium

- **Timothy McMahon, OD, Endowed Lecture**
  “Opportunity for Impact: Therapeutic Lenses and Ocular Graft-vs-Host Disease”
  **Deborah S. Jacobs, MD**
  Massachusetts Eye & Ear Infirmary
  Delivered April 22, 2011

- **Marvin D. Henry, MD, Memorial Lecture**
  “Manpower Needs in Ophthalmology”
  **Grant T. Liu, MD**
  University of Pennsylvania School of Medicine
  Delivered October 14, 2011, at the 2nd Biennial Neuro-Ophthalmology Symposium

- **Eugene R. Folk, MD, Memorial Lecture**
  “Phylogeny of Eye Movements and the Extraocular Muscles”
  **Steven M. Archer, MD**
  W.K. Kellogg Eye Center, University of Michigan
  Delivered September 16, 2011, at the Pediatric Ophthalmology Meeting

Dr. Rohit Varma, Dean Dimitri Azar and Dr. Joel Sugar commend Dr. Sandeep Jain and Dr. Ali Djalilian on their promotion to Associate Professors.
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**Marion Schenk Esq, Professor of Ophthalmology**  
*Deepak Shukla, PhD*  
Director, Ocular Virology Laboratory

Two R21 grants submitted by Dr. Shukla to the National Eye Institute — Role of Optineurin in Ocular Herpes Infection and Entry Based Inhibition of Ocular HSV-1 Infection — were awarded at the end of 2012. He was invited as a keynote speaker to the annual meeting of the Indian Association of Medical Microbiologists in Varanasi, India.

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**Morton F. Goldberg, MD, FACS, Professor of Ophthalmology**  
*Mahnaz Shahidi, PhD*  
Director, Applied Physics Laboratory

National Eye Institute review of Dr. Shahidi’s competitive renewal application for her R01 research grant Noninvasive Imaging of Chorio-Retinal Oxygen Tension (R01EY017918) received a third percentile rank and is expected to be renewed through 2017. Dr. Shahidi was selected to serve on the NEI grant review study section, Diseases and Pathophysiology of the Visual System.

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**Sears-Schenk Professor of Ophthalmology**  
*David Pepperberg, PhD*  
Director, Photoreceptor Research Laboratory

A paper recently published in *Nature Communications* by Dr. Pepperberg and his colleagues reports a milestone advance in their research to develop a new type of molecular therapy for age-related macular degeneration and related photoreceptor degenerative diseases. Their work involves the creation of novel light-sensitive chemical compounds that can interface with inner retinal nerve cells to “bypass” dysfunctional rod and cone photoreceptors in the diseased retina.

---

**Joel Sugar, MD, Endowed Professor of Ophthalmology**  
*Joel Sugar, MD*  
Professor of Ophthalmology, Cornea Service

In addition to serving as Interim Department Head in 2012, Dr. Sugar continued seeing patients and participated in the Cornea Donor study and the Fuchs Corneal Endothelial Dystrophy Study. He was awarded the Castroviejo Medal by the Cornea Society for “outstanding contributions to Ophthalmology in the field of cornea and anterior segment of the eye.”

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**Jacob Wilensky, MD, Endowed Professor of Ophthalmology**  
*Jacob Wilensky, MD*  
Professor of Ophthalmology, Glaucoma Service

Dr. Jacob Wilensky served as the 47th C.S. O’Brien Professor at Tulane University Department of Ophthalmology, and delivered the lecture, “What have we learned from clinical trials in glaucoma?” at their Alumni Day, June 8 – 9, 2012. Dr. Wilensky earned his BA, MD, and completed his Ophthalmology Residency at Tulane.

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Journal Articles
07.01.2011–06.30.2012


Chaudhary S, Namavari A, Yco L, Chang JH, Sonawane S, Khanolkar V, Sarkar J, Jain S. Neurotrophins and nerve regeneration-associated genes are expressed in the cornea of...
after lamellar flap surgery. Cornea. 2012 Jun 5. [Epub ahead of print]


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Karasneh GA, Shukla D. Herpes simplex virus infects most cell types in vitro: clues to its success Viral J. 2011 Oct 26;8:481. Review.


Li SY, Birnbaum AD, Tessler HH, Goldstein DA. Posterior syphilitic uveitis: clinical characteristics, co-infection with HIV, response to...


Ozra EZ, Morris C, Birnbaum AD, Tessler HH, Goldstein DA. Chronic anterior uveitis in common variable immunodeficiency.


Ophthalmic Manifesto for Correcting Astigmatism: An P. Gills.


ARVO Meeting Abstracts 05.06.12–05.10.12


Antoine TE, Shukla D, Non-muscle myosin IIa mediates HSV-1 entry into the cells of the human and pig corneas. ARVO Meeting Abstracts 2012;53:6153.


Grybauskas A, Wagner E, Burdi RA, Walker L, Knepper PA.Fatal innate immune differential response to three dietary fatty acids challenged with low molecular weight hyaluronic acid, a TLR-4

Bold: Regular Faculty

Red: Volunteer and Adjunct Faculty

Blue: Residents and Fellows


Lim JM, Hou JH, Singa R, Aakalu VK, Setabutr P. Incidence and demographic characteristics of patients with different types of ptoxis referred to oculoplastic at A tertiary referral center. ARVO Meeting Abstracts 2012;55:1449.


Oltra EZ, Chow CC, Chau FY, Lim JI, Moss HE. Neurocognitive function and retinal thinning by spectral-domain optical coherence tomography in sickle cell patients. ARVO Meeting Abstracts 2012;55:1160.


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<td>Dimitri Azar, MD, MBA</td>
<td>Metalloprotease Expression in Corneal Wound</td>
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<td>Rod-cone Interactions in Mesopic Vision</td>
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<tr>
<td>Sandeep Jain, MD</td>
<td>Keratocyte Role in Guidance of Corneal Nerves</td>
<td>National Eye Institute</td>
</tr>
<tr>
<td>Charlotte Joslin, OD, PhD</td>
<td>Local Food Environments and Disparities in Ovarian Cancer Survival</td>
<td>National Institute on Minority Health and Health Disparities, Center of Excellence Program</td>
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<tr>
<td>J. Jason McAnany, PhD</td>
<td>Mechanisms Limiting Visual Performance in Retinal Degenerations</td>
<td>National Eye Institute</td>
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<tr>
<td>David Pepperberg, PhD</td>
<td>Development of Nanoscale Neuromodulating Platforms</td>
<td>National Eye Institute</td>
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<tr>
<td>Mahnaz Shahidi, PhD</td>
<td>Retinal Image Quality In Retinal-Diseased Eyes</td>
<td>National Eye Institute</td>
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<tr>
<td>Mahnaz Shahidi, PhD</td>
<td>Noninvasive Imaging of Choriretinal Oxygen Tension</td>
<td>National Eye Institute</td>
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<tr>
<td>Mahnaz Shahidi, PhD</td>
<td>Investigating Optical and Neural Causes of Vision Loss</td>
<td>Department of Veterans Affairs</td>
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<tr>
<td>Deepak Shukla, PhD</td>
<td>Molecular Mechanism of HSV Entry and Spread</td>
<td>National Institute of Allergy and Infectious Diseases</td>
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<tr>
<td>Deepak Shukla, PhD</td>
<td>Significance of Heparan Sulfate in HSV-1 Spread</td>
<td>National Institute of Allergy and Infectious Diseases</td>
</tr>
<tr>
<td>Thasarat Vajaranant, MD</td>
<td>The Impact of Gender in Eye Diseases and Glaucoma</td>
<td>National Eye Institute Building Interdisciplinary Research Careers in Women’s Health Program/ National Institute of Child Health and Human Development/ Office of Research on Women’s Health</td>
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<tr>
<td>Beatrice Yue, PhD</td>
<td>Cellular Processing of Optineurin, the Product of a Glaucoma Gene</td>
<td>National Eye Institute</td>
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## Foundation Sponsored Research

<table>
<thead>
<tr>
<th>Investigator</th>
<th>Title</th>
<th>Source</th>
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<tbody>
<tr>
<td>Vinay Aakalu, MD, MPH</td>
<td>Lacrimal Stem Cells and Dry Eye Research</td>
<td>American Society of Cataract and Refractive Surgery</td>
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<tr>
<td>Ahmad Aref, MD</td>
<td>Omega-3 Fatty Acid Nutritional Supplementation in the Treatment of Ocular Surface Disease Associated with Intraocular Pressure-Lowering Medications</td>
<td>American Glaucoma Society</td>
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<tr>
<td>Dimitri Azar, MD, MBA</td>
<td>Unrestricted Grant to Department</td>
<td>Research to Prevent Blindness</td>
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<tr>
<td>Pablo Barrionuevo, PhD (Cao)</td>
<td>Postdoctoral Fellowship</td>
<td>International Brain Research Organization</td>
</tr>
<tr>
<td>Dingcai Cao, PhD</td>
<td>Alcohol Effects on Visual Processing in At-Risk Social Drinkers</td>
<td>AMBRF The Foundation for Alcohol Research</td>
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<tr>
<td>Dingcai Cao, PhD</td>
<td>Mesopic Visual Function Assessment and Risk Genotypes for Age-related Macular Degeneration</td>
<td>Midwest Eye-Banks</td>
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<tr>
<td>Robert Chang, PhD</td>
<td>Differential Binding of Endostatin-derived Peptides and VEGF-A, -B, -C and -D Short Peptides to VEGF Receptors 1, 2 and 3 via SPR in Vitro</td>
<td>Illinois Society for the Prevention of Blindness</td>
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<tr>
<td>Ali Djallilian, MD</td>
<td>Career Development Award</td>
<td>Research to Prevent Blindness</td>
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<tr>
<td>Michael Grassi, MD</td>
<td>Cellular Studies of Apoptosis in RP Using Small Molecule Screening and RNA Interference</td>
<td>Foundation Fighting Blindness</td>
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<tr>
<td>Joelle Hallak (Jain)</td>
<td>BDNF Polymorphism in Dry Eye Disease and Depression</td>
<td>Illinois Society for the Prevention of Blindness</td>
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<tr>
<td>Sandeep Jain, MD</td>
<td>Numerical and Experimental Study of Collagen Cross-Linking Treatment for Keratocous</td>
<td>UIC Chancellor’s Discovery Fund for Multidisciplinary Research</td>
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<tr>
<td>Sandeep Jain, MD</td>
<td>Reinnervation After Corneal Surgery</td>
<td>Eye Bank Association of America</td>
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<td>Iris Kassem, MD, PhD</td>
<td>Fibrin Membrane Formation and Inflammation</td>
<td>Knights Templar Eye Foundation</td>
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<tr>
<td>Paul Knepper, MD, PhD</td>
<td>Activation of Innate Immune Toll-4 Receptor in POAG</td>
<td>American Health Assistance Foundation</td>
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<tr>
<td>Hsuan Yolanda Lu (Cao)</td>
<td>Medical Student Fellowship</td>
<td>Fight for Sight</td>
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<td>Behrad Milani, MD (Maumenee)</td>
<td>Gene and Mutation Identification in the Knobloch Syndrome, an Entity Combining Neural Tube Defects, Congenital High Myopia and Childhood Retinal Detachment</td>
<td>Illinois Society for the Prevention of Blindness</td>
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<tr>
<td>Paul Park (Shukla)</td>
<td>Targeted Therapy for HSV-infected Corneas</td>
<td>Illinois Society for the Prevention of Blindness</td>
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<tr>
<td>David Pepperberg, PhD</td>
<td>Plasmonic Nano-antennas to Enhance Light Sensitivity of Retinal Molecular Devices Designed for Vision Restoration</td>
<td>Doheny Eye Institute/Beckman Initiative for Macular Degeneration</td>
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<td>Mahnaz Shahidi, PhD</td>
<td>Senior Scientific Investigator Award</td>
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<td>Deepak Shukla, PhD</td>
<td>Lew R. Wasserman Merit Award</td>
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<tr>
<td>Deepak Shukla, PhD</td>
<td>Novel Peptides to Understand Herpetic Damage to Human Trabecular Meshwork via Actin Rich Nanotubular Structures</td>
<td>The Glaucoma Foundation</td>
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<tr>
<td>Sanja Turturro, PhD (Yue)</td>
<td>Delivery of Active Matrix Metalloproteinase-3 Using Microparticles</td>
<td>Illinois Society for the Prevention of Blindness</td>
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<td>Thasarat Vajaranant, MD</td>
<td>Structural Testing in Advanced Glaucoma</td>
<td>American Glaucoma Society</td>
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<tr>
<td>Thasarat Vajaranant, MD</td>
<td>Mentoring for the Advancement of Physician Scientists</td>
<td>American Glaucoma Society</td>
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<tr>
<td>Hong-Yu Ying (Yue)</td>
<td>Identification of miRNAs that Regulate the Expression of Myocilin, a Glaucoma Gene</td>
<td>Illinois Society for the Prevention of Blindness</td>
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<tr>
<td>Xiaohua Zhuang, PhD</td>
<td>Novel Psychophysival Assessment of Functional Loss in Pre-perimetric Glaucoma</td>
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## CLINICAL INVESTIGATIONS AND TRIALS

### CONTACT LENS

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<tr>
<td>Charlotte Joslin, OD, PhD</td>
<td>Corneal Refractive Power Post Refractive Surgery</td>
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<tr>
<td>Ellen Shorter, OD; C. Joslin</td>
<td>Contact Lens Parameters in Keratoconus Patients at UIC, Illinois Eye and Ear Infirmary</td>
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<tr>
<td>Ellen Shorter, OD; C. Joslin</td>
<td>The Use of Daily Disposable Silicone Hydrogel Contact Lenses in Patients with Dry Eye at the University of Illinois</td>
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### CORNEA

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<tr>
<td>Soledad Cortina, MD; E. Shorter</td>
<td>Longitudinal Evaluation of Boston Keratoprosthesis</td>
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<tr>
<td>Soledad Cortina, MD; J. de la Cruz</td>
<td>Imaging Techniques for the Management of Patients with Keratoprosthesis</td>
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<tr>
<td>Jose de la Cruz, MD</td>
<td>Safety and Efficacy of the KXL System with Riboflavin 0.1% Ophthalmic Solution for Corneal Collagen-Linking in Eyes with Keratoconus</td>
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<td>Ali Djalilian, MD</td>
<td>Changing the Fate of Skin Epithelial Cells Grown on Human Amniotic Membrane</td>
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<td>Sandeep Jain, MD</td>
<td>Histopathologic and Immunophenotypic Characteristics of Conjunctival Biopsies in Chronic Graft-Versus-Host Disease</td>
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<td>Sandeep Jain, MD</td>
<td>Presence of Neutrophil Extracellular Traps (NET) in Dry Eye Disease</td>
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<td>Presence of Proteins and Enzymes in Lacrimal Gland</td>
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<td>Sandeep Jain, MD</td>
<td>Symptom Analysis of Dry Eye Disease</td>
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<td>Joel Sugar, MD</td>
<td>Compassionate Use of the Ophthecl 311 Artificial Iris Lens Implant</td>
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<td>Joel Sugar, MD</td>
<td>Cornea Donor Study – 10 year follow-up</td>
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<tr>
<td>Joel Sugar, MD; E. Tu</td>
<td>Fuch’s Endothelial Corneal Dystrophy Study</td>
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<td>Elmer Tu, MD; S. Cortina</td>
<td>Cornea Preservation Time Study</td>
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<td>Elmer Tu, MD</td>
<td>Parasitic Ulcer Treatment Trial (Planning Stage)</td>
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<tr>
<td>Elmer Tu, MD; W. Mieler</td>
<td>Results of Cataract Surgery in Patients with Retinitis Pigmentosa</td>
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<tr>
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<tbody>
<tr>
<td>Thasarat Vajaranant, MD; J. Wilensky; M. Lunde</td>
<td>Comparing the Effectiveness of Treatment Strategies for (Primary) Open-Angle Glaucoma Registry in Glaucoma Outcome Research (RiGOR)</td>
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<tr>
<td>Thasarat Vajaranant, MD</td>
<td>Estrogen Deficiency and Risk for Premature Aging of the Optic Nerve and Glaucoma</td>
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<tr>
<td>Thasarat Vajaranant, MD</td>
<td>Structure and Function of the Optic Nerve in Glaucoma</td>
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<tr>
<td>Jacob Wilensky, MD</td>
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<td>Heather Moss, MD, PhD</td>
<td>Afferent Visual Function in Amyotrophic Lateral Sclerosis</td>
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<tr>
<td>Heather Moss, MD, PhD</td>
<td>A Phase 1-Open-label, Dose Escalation Trial of QPI-1007 Delivered by Single Intravitreal Injection to Patients with Optic Nerve Atrophy (Stratum I) and Acute Non-Arteritic Anterior Ischemic Optic Neuropathy (NAION) (Stratum II)</td>
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<tr>
<td>Heather Moss, MD, PhD</td>
<td>A Prospective Case-crossover Study to Evaluate the Possible Association Between the Use of PDES Inhibitors and the Risk of Acute Nonarteritic Anterior Ischemic Optic Neuropathy (NAION)</td>
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<tr>
<td>Heather Moss, MD, PhD</td>
<td>Prospective Evaluation of Retinal Hemodynamics in Humans With and Without Papilledema</td>
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<td>Heather Moss, MD, PhD</td>
<td>Prospective Study to Determine the Proportion of Patients with Isolated Third, Fourth and Sixth Nerve Palsies of Microvascular versus Non-Microvascular Etiology</td>
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<tr>
<td>Heather Moss, MD, PhD</td>
<td>Retrospective Evaluation of Optical Coherence Tomographic Imaging of Optic Nerve Head Evaluation</td>
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*Red indicates a sponsored clinical trial. Filled rows indicate open patient enrollment.*
### OCULOPLASTIC SURGERY

- **Vinay Aakalu, MD, MPH**
  - Lacrimal and Accessory Lacrimal Tissue Gene Expression

- **Pete Setabutr, MD**
  - Biopsy-Proven Ocular Sarcoidosis: A Descriptive Study
  - Elemental Peri-Orbital Tissue Gene Expression Analysis
  - Oculoplastic Considerations in Keratoprosthesis Surgery
  - Roof Pad Sculpting in Upper Blepharoplasty

- **Pete Setabutr, MD**
  - Ocular Trauma Score and Visual Acuity Outcomes in Ocular Paintball Injuries

- **Pete Setabutr, MD**
  - Biopsy-Proven Ocular Sarcoidosis: A Descriptive Study

### PEDIATRIC OPHTHALMOLOGY & ADULT STRABISMUS

- **Iris Kassem, MD, PhD**
  - Pediatric Eye Disease Investigator Group

- **Iris Kassem, MD, PhD**
  - Positional Changes in Preoperative Measurements for Pediatric Cataract Surgery

- **Irene Maumenee, MD, T. Vajaranant**
  - Ocular Manifestations of Connective Tissue Diseases

- **Aisha Traish, MD**
  - Candidate Gene Screening in Peters’ Anomaly: A Study of Two Pedigrees Combining Dominant Cataracts and Peters’ Anomaly

### RETINA

- **Yannek Leiderman, MD, PhD**
  - Biomarkers in Proliferative Retinopathies

- **Yannek Leiderman, MD, PhD**
  - Systemic Immunosuppressive Therapy for Eye Diseases Cohort Study

- **Jennifer Lim, MD, Y. Leiderman; F. Chau; L. Ulanski**
  - A 1-Month, Multicenter, Observational Study to Evaluate the Degree of Ocular Inflammation Associated with Pars Plana Vitrectomy

- **Jennifer Lim, MD, Y. Leiderman; F. Chau; L. Ulanski**
  - A Comparative Effectiveness Study of Intravitreal Afiblert, Bevacizumab and Ranibizumab for Diabetic Macular Edema (Protocol I)

- **Jennifer Lim, MD, Y. Leiderman; F. Chau; L. Ulanski**
  - A Double-Masked, Randomized, Active-Controlled Study of the Efficacy, Safety and Tolerability of Intravitreal Administration of VEGF Trap-Eye (Intravitreal Afiblert Injection [IAI]) in Patients with Macular Edema Secondary to Branch Retinal Vein Occlusion

- **Jennifer Lim, MD, Y. Leiderman; F. Chau; L. Ulanski**
  - Effect of Diabetes Education during Retinal Ophthalmology Visits on Diabetes Control (Protocol M)

- **Jennifer Lim, MD, Y. Leiderman; F. Chau; L. Ulanski**
  - An Evaluation of Intravitreal Ranibizumab for Vitreous Hemorrhage Due to Proliferative Diabetic Retinopathy (Protocol N)

- **Jennifer Lim, MD, Y. Leiderman; F. Chau; L. Ulanski**
  - Genes in Diabetic Retinopathy Project

- **Jennifer Lim, MD**
  - Genetics of AMD in African Americans

- **Jennifer Lim, MD, Y. Leiderman; F. Chau; L. Ulanski**
  - Intravitreal Ranibizumab or Triamcinolone Acetonide in Combination with Laser Photocoagulation for Diabetic Macular Edema (Protocol I)

- **Jennifer Lim, MD; L. Ulanski**
  - Maculopathy

- **Jennifer Lim, MD**
  - Optical Coherence Tomographical Retinal Thickness Analysis of Sickle Cell Patients

- **Jennifer Lim, MD; Y. Leiderman; F. Chau; L. Ulanski**
  - An Open-Label Study of the Safety and Tolerability of Combining IBI-20089 (Triamcinolone Acetonide Intravitreal Injection) When Used Adjunctively with Lucentis® 0.5 mg Intravitreal Injection in Subjects with Subfoveal Neovascular Age-Related Macular Degeneration

- **Jennifer Lim, MD; Y. Leiderman; F. Chau; L. Ulanski**
  - A Randomized, Double Masked, Controlled Phase 3 Study of the Efficacy, Safety and Tolerability of Repeated Intravitreal Administration of VEGF Trap-Eye in Subjects with Macular Edema Secondary to Central Retinal Vein Occlusion (CRVO)

- **Jennifer Lim, MD; L. Ulanski**
  - Intravitreal Dexamethasone Posterior Segment Drug Delivery System (DEX DDS) Applicator System in the Treatment of Patients with Diabetic Macular Edema

- **Jennifer Lim, MD**
  - A Retrospective Case Series to Assess the Efficacy of Anti-VEGF Therapy in the Treatment of Macular Edema Secondary to Retinal Vein Occlusion

- **William Mieler, MD**
  - Early Detection of Functional Changes Using Micropachymetry in Patients with Subclinical Hydroxychloroquine (Plaquenil) Toxicity

- **William Mieler, MD**
  - Ocular Complications of Vaginal Mesh Implants

- **William Mieler, MD**
  - Radiation-Induced Maculopathy following Brachytherapy Treatment of Uveal Melanoma

- **William Mieler, MD**
  - Results of Brachytherapy Treatment of Uveal Melanoma

- **Lawrence Ulanski, MD**
  - A 3-Year, Phase 3, Multicenter, Masked, Randomized, Sham-Controlled Trial to Assess the Safety and Efficacy of 700 ug and 30 ug Dexamethasone Posterior Segment Drug Delivery System (DEX PS DDS) Applicator System in the Treatment of Patients with Diabetic Macular Edema

- **Lawrence Ulanski, MD**
  - Age-Related Eye Disease Study 2 (AREDS2): A Multi-Center, Randomized Trial of Lutein, Zeaxanthin, and Omega-3 Long-Chain Polysaturated Fatty Acids Docosahexaenoic Acid (DHA) and Eicosapentaenoic Acid (EPA) in Age-Related Macular Degeneration

- **Lawrence Ulanski, MD**
  - Home Vision Monitoring in AREDS2 for Progression to Neovascular AMD Using the ForeseeHome Device

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To learn more about any of these investigations and trials, including how to refer patients, please call (312) 996-6591.
# Ophthalmologists in Training

<table>
<thead>
<tr>
<th>Residents</th>
<th>SECOND YEAR</th>
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<tbody>
<tr>
<td>Kelly Bui, MD</td>
<td>Janet Lim, MD, MBA</td>
</tr>
<tr>
<td>MD—University of Washington</td>
<td>MD—University of California-Irvine</td>
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<table>
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<tbody>
<tr>
<td>Michael Andreoli, MD</td>
<td>Asim Farooq, MD, MPH</td>
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<tr>
<td>MD—Boston University School of Medicine</td>
<td>MD—University of Illinois College of Medicine-Chicago</td>
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<tbody>
<tr>
<td>Joshua Hou, MD</td>
<td>Randee Miller, MD</td>
</tr>
<tr>
<td>MD—Washington University, St. Louis</td>
<td>MD—Wayne State University School of Medicine</td>
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<td>Sara Huh, MD</td>
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<td>Renu Jivrajka, MD</td>
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</table>
Clinical Fellows

**CORNEA**
Scott Kelly, MD, MPH
MD—University of Texas HSC at Houston

**CORNEA**
Samuel Lee, MD
MD—Loma Linda University School of Medicine

**GLAUCOMA**
Chirag Patel, MD
MD—Indiana University School of Medicine-Indianapolis

**NEURO-OPHTHALMOLOGY**
Peter MacIntosh, MD
MD—Chicago Medical School, Rosalind Franklin University

**OCULOPLASTIC SURGERY**
Rakesh Patel, MD
MD—Medical University of South Carolina, Charleston

**PEDIATRIC OPHTHALMOLOGY**
Senem Salar, MD
MD—Hacettepe University Faculty of Medicine, Ankara, Turkey

**RETINA**
Clement Chow, MD
MD—University of Wisconsin School of Medicine

**RETINA**
Vikram Setlur, MD
MD—University of Illinois College of Medicine-Chicago
FORMER RESIDENTS RETURN
Pediatric Ophthalmology & Adult Strabismus Service

Javaneh Abbasian, MD, and Genie Bang, MD, joined the Pediatric Ophthalmology & Adult Strabismus Service as Assistant Professors of Ophthalmology. Both doctors were residents from 2008-2011 at the Illinois Eye and Ear Infirmary, UIC Department of Ophthalmology & Visual Sciences.

Javaneh Abbasian, MD, has long standing ties to UIC and the Chicago area. She earned her BA in Biology at Northwestern University and her medical degree at UIC’s College of Medicine. She served as Chief Resident in Ophthalmology from 2010–11. She did her pediatric ophthalmology fellowship at Children’s Hospital of Philadelphia.

“As a resident, I had the chance to be among an excellent group of mentors who paved the way for me and will now be my colleagues,” says Dr. Abbasian.

Genie Bang, MD, received her medical degree from the University of Minnesota Medical School-Twin Cities. She holds a BS in Biology from Brown University. After completing her residency at the Infirmary, she moved on to a fellowship in Pediatric Ophthalmology & Strabismus at the Mayo Clinic.

“The Infirmary is a great environment in which to start my career, and I hope to contribute as much as I have received,” says Dr. Bang.
Illinois Eye and Ear Infirmary Residency Program

UIC ALUMNI

Anniversary Classes 2012

65TH ANNIVERSARY
Resident Class of 1947
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Sidney W. Penn, MD
James D. Stratton, MD†
Florence A. Walters, MD

60TH ANNIVERSARY
Resident Class of 1952
Frank D. Berry, MD
George T. Fitzgerald, MD
Margaret A. Halle, MD
Clarence L. Hans, MD
Morton R. Kahn, MD
Max Kaplan, MD†
J. Harley Quint Jr., MD
Taylor Smith, MD
Dana O. Troyer, MD†

55TH ANNIVERSARY
Resident Class of 1957
Robert Azar, MD
Alina A. Domanski, MD†
Edward B. Lazor, MD
John H. Panton, MD
Judith V. Perry-Smith, MD
Karl Ticho, MD

50TH ANNIVERSARY
Resident Class of 1962
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Richard E. Berge, MD
Curtis Deters, MD
Ronald S. Fishman, MD
Donald J. Holzberg, MD
Theodore Lawwill, MD
Joseph M. Robbins, MD†
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Resident Class of 1967
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Bernard Davidoff, MD
N. Warren Hindle, MD
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Mary L. Spitzer, MD
Charles Vygantas, MD
Paul R. Rice, MD
Thomas S. Stevens, MD
Howard Tessler, MD
Michael B. Woolf, MD

35TH ANNIVERSARY
Resident Class of 1977
Alan J. Axelrod, MD
Krystyna H. Berry, MD
Robert C. Fletcher, MD
Walter I. Fried, MD, PhD
Nayan V. Gandhi, MD
James L. Green, MD
Sherwin J. Isenberg, MD
Harvey K. Minatoya, MD
Donald R. Sanders, MD
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30TH ANNIVERSARY
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Baja K. Gupta, MD
Michael Janowicz, MD
Eugene Liu, MD
Michael E. Mockovak, MD
Peter K. Rabiah, MD
Bruce Saran, MD

25TH ANNIVERSARY
Resident Class of 1987
Mary P. Collins, MD
Douglas G. Day, MD
Janis I. Dzielak, MD
R. Mark Hatfield, MD
Cheryl B. Kraff-Cooper, MD
Paul F. Nichols, MD
Ann K. Williams, MD
Douglas P. Williams, MD

20TH ANNIVERSARY
Resident Class of 1992
Brian S. Biesman, MD
SueEllen Colby, MD
Daniel J. Green, MD
Balaji K. Gupta, MD
Michael Janowicz, MD
Sukesh Kansal, MD
Mona Khan, MD
Nighet Khan, MD
Hemang Patel, MD
Raju Sarwal, MD
Thao Tran, MD
Phillip Wu, MD

15TH ANNIVERSARY
Resident Class of 1997
Charles Ahn, MD
Frank Caserta, MD
Teresa Chen, MD
Joseph Garber, MD
Peggy Granates, MD
Ashok Penmatcha, MD
Daniel Taglia, MD

10TH ANNIVERSARY
Resident Class of 2002
Vandana Badlani, MD
Bruce Buerk, MD
Faisal Haq, MD
Sukesh Kansal, MD
Mona Khan, MD
Nighet Khan, MD
Ellis Marks, MD
Hemang Patel, MD
Raju Sarwal, MD
Thao Tran, MD
Phillip Wu, MD

5TH ANNIVERSARY
Resident Class of 2007
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Manishi Desai, MD
Jeremy Keenan, MD
Nikhil Oza, MD
Alexandra M. Ilkiw, MD
Janet Lee, MD
Danil Lubeck, MD
Donald Smart, MD
Judith Perry Smith, MD
Ann K. Williams, MD
Douglas P. Williams, MD

Names in italics have made a donation to support resident education.

†Deceased

If you wish to make a gift to support resident education, please contact the Department at (312) 996-6591, email ophgift@uic.edu, or visit our website: IllinoisEyeAndEarInfirmary.com

The Department of Ophthalmology & Visual Sciences wishes to thank the following individuals for support of Resident Education in 2012.

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Daniel C. Alter, MD, PhD
Franz S. Biesman, MD
Norbert M. Becker, MD, Res’87
Bruce Buerk, MD
Terese Chen, MD
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Donald Smart, MD
Judith Perry Smith, MD, Res’57
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Douglas P. Williams, MD
George J. Witterman, MD
Wilson Ophthalmics
## upcoming symposia 2013

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<td>22</td>
<td>2013 Retina Symposium</td>
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<td>July</td>
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<td>International Children’s Anophthalmia and Microphthalmia Network Annual Meeting Hosted by Pediatric Ophthalmology &amp; Adult Strabismus</td>
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