ILLINOIS EYE AND EAR INFIRMIARY LEADERSHIP

R.V. Paul Chan, MD, MSc, MBA, FACS | Interim Department Chair
John H. Panton Professor in Ophthalmology

Joel Sugar, MD | Vice Chair for Clinical Operations
Joel Sugar MD Professor in Ophthalmology

William F. Mieler, MD, FARVO | Vice Chair for Education
Cless Family Professor in Ophthalmology

Timothy McMahon, OD, FAAO | Vice Chair for Optometry
Professor of Ophthalmology

Deepak Shukla, PhD | Vice Chair for Research
Marion H. Schenk Esq, Professor in Ophthalmology for Research of the Aging Eye

Pete Setabutr, MD | Vice Chair for Global Ophthalmology
Associate Professor of Ophthalmology

Illinois Eye and Ear Infirmary Leadership 2018 (left to right): Drs. Chan, Mieler, Rosenblatt (Currently Executive Dean of the College of Medicine, UIC), McMahon, and Sugar (Not pictured: Drs. Shukla and Setabutr)
A MESSAGE FROM MARK ROSENBLATT, MD, PHD, MBA

Over the last 5 years, I have had the pleasure of leading the Department of Ophthalmology and Visual Sciences, a department with a long history of academic and clinical accomplishments. Our Department has grown throughout the years due to its dedication to excellence in research, education, and clinical care. Today, the Department continues to advance ophthalmology through innovation and discovery, and I am honored to have helped foster these achievements.

I have recently accepted a position with the University of Illinois at Chicago as the Executive Dean of the College of Medicine. During this exciting transition, Dr. R.V. Paul Chan has accepted the role of Interim Head of the Department of Ophthalmology and Visual Sciences. Dr. Chan is an eminent clinician and scientist who has been an exemplary Vice Chair for the Department and I am confident he will excel in his new role. I am proud to remain an active member of the Department of Ophthalmology and Visual Sciences in its clinical, educational and research missions. As Executive Dean of the College of Medicine, I recognize the stellar work accomplished by this Department and look forward to supporting its vigorous efforts to reach new heights.

A MESSAGE FROM R. V. PAUL CHAN, MD, MSC, MBA, FACS

I am very grateful to serve as Interim Chair of the Department of Ophthalmology and Visual Sciences. On behalf of the Department, I thank Dean Rosenblatt for his tireless work to advance our research, clinical, and education programs.

At the core of the Department’s mission is our commitment to training and mentoring the next generation of clinicians and vision scientists. We continue to strengthen our residency and fellowship programs as we advance the field of ophthalmology, treat complicated ocular diseases, and care for patients around the world. UIC has a long-standing commitment to technological advances and innovation, helping drive the development of novel treatment options that advance the care of our current and future patients. I look forward to ensuring that our Department continues to be at the forefront of truly life-changing discoveries.
When Martha Holland first received the diagnosis of choroidal melanoma, a malignant cancer of the eye, she was told that removing the eye was her best treatment option. Imagine the relief she felt when obtaining a second opinion from William F. Mieler, MD who gave her hope to save the eye. Dr. Mieler is the Vice Chair for Education, Director of the Ocular Oncology Clinic, and Co-Director of the Vitreoretinal Fellowship Program in the Department of Ophthalmology and Visual Sciences at the Illinois Eye and Ear Infirmary. Dr. Mieler told Martha Holland, “I believe that we can save your eye with at least some of the vision, without jeopardizing your general health.”

For 35 years, Martha was a 5th grade teacher in Lincoln, Illinois where she has resided her entire life. Since retiring, she has enjoyed gardening, visiting her summer home in Lake of the Ozarks, Missouri, and watching Illini basketball with her sister, Rhoda. She enjoys the simple things, such as baking and making her special yeast rolls, and is glad to say she has always been in good health, having taken great care of herself. Ever since her mother and sister were diagnosed with glaucoma, Martha has faithfully visited the eye doctor every year without fail. It was 9 months after one visit in 2013, when she noticed her distance vision had changed. In May 2014, her doctor sent her to a local retina specialist who confirmed that Martha had a malignant tumor. Martha and her close family and friends were stunned, not knowing what to do next. Her primary ophthalmologist recommended three specialists, but highly recommended that she see Dr. Mieler at UIC who is recognized as one of the world’s leading ocular oncologists (physicians who treat eye tumors and cancers). Martha was eventually treated with brachytherapy, a form of localized radiation, and her eye was saved.

Terry McCleary had a similar experience to Martha Holland, and was also shaken by the diagnosis of eye cancer. Having noticed bursts and flashes of light during the previous year, Terry experienced a sudden, unusual sensation in his eye while at work. His optometrist told him his retina was detaching and that it required immediate surgery. Upon reviewing all ocular findings and systemic results, his retinal surgeon cancelled the scheduled procedure: he had determined that the retinal detachment was associated with a choroidal melanoma. Terry recalls his surgeon’s advice to stay calm. He then referred Terry to Dr. Mieler at UIC. Similar to Martha Holland, Terry eventually received brachytherapy treatment to the tumor in his eye.

Ocular Oncology specialists care for patients with eye tumors or cancers that affect the eye. According to Dr. Mieler, the most common primary eye cancer in adults is uveal melanoma, a pigmented tumor involving the inside lining of the eye. This type of melanoma is extremely rare, with only 5-6 patients per million diagnosed annually, or approximately 5% of all of the types of melanomas seen annually in the United States.

As one of the very few ocular cancer subspecialists in the Midwest, Dr. Mieler sees hundreds of patients with a diagnosis of eye cancer. This includes other types of cancers that spread from distant parts of the body into the eye, known as choroidal or intraocular metastasis, along with entities such as leukemia and lymphoma, and other even rarer types of cancers. “Treatment depends on the type of cancer,” states Dr. Mieler, “and often requires brachytherapy or other forms of radiation administered in collaboration with the members of the Department of Radiation Oncology, or systemic chemotherapy performed in collaboration with the Oncology Department.” Special imaging modalities are also utilized to assess these tumors. “Helping with diagnoses is our absolutely superb ophthalmic imaging section, which provides ancillary studies to support the diagnosis by taking photographs of the eye, or utilizing echography, or sound waves, to detect abnormalities,” said Dr. Mieler.

After finishing his retina fellowship 35 years ago, Dr. Mieler completed an ocular oncology fellowship at Wills Eye Hospital in Philadelphia under the direction of Jerry A. Shields, MD, who is still practicing and is one of the premiere ocular oncologists of our time. Expertise in ocular oncology means that Dr. Mieler has a responsibility beyond ophthalmology. He notes that, “Ocular oncology is both a sight-threatening and life-threatening process. The combination of potentially losing your vision, let alone your life, is an incredibly anxiety-provoking situation for patients. It deals with our two biggest fears, one of losing vision and the other of dying.”

For Martha and Terry, the diagnosis of ocular cancer was frightening, but did not mean the loss of an eye or vision. Terry continues to manage his engineering firm, and is sure to find time for his favorite hobby, fly-fishing. Martha travels hours by train every 6 weeks to visit Dr. Mieler. Although her depth perception will never be the same, Martha’s vision in both her eyes allows her to live her life and do the things she loves. “I’m thankful that there are doctors like Dr. Mieler to take care of people who have choroidal melanoma, because it’s very serious. I am really lucky that I was assessed at the University of Illinois at Chicago, where I have been and will remain under the care of Dr. Mieler.”
“I’m thankful that there are doctors like Dr. Mieler to take care of people who have choroidal melanoma, because it’s very serious. I am really lucky that I was assessed at the University of Illinois at Chicago, where I have been and will remain under the care of Dr. Mieler.”

- Martha Holland
MOLECULE CLEARS OCULAR HERPES

A surprise discovery could treat ocular herpes with few side effects, and may have potential as a broad-spectrum antiviral drug

When Deepak Shukla, PhD and his team at the Ocular Virology Laboratory added the small drug molecule BX795 to herpes-infected cells, they expected the virus to proliferate. Instead, the opposite happened. The molecule suppressed the herpes virus with seemingly few side effects. Now, Dr. Shukla’s lab at the Department of Ophthalmology and Visual Sciences at the Illinois Eye and Ear Infirmary is excited about the potential treatment implications for ocular herpes and other viruses as well.

The discovery began as a study of the general propagation mechanisms of herpes simplex virus type 1 (HSV-1). HSV-1 is a contagious viral infection that mainly affects the mouth and eyes. When the HSV-1 virus infects the eye, it causes clusters of sores on the eyelid or surface of the cornea. Serious complications like blindness and deadly brain infections are possible if the virus is allowed to recur.

Currently, HSV-1 infections in the eye are treated with a class of antivirals called nucleoside analogs. Nucleoside analogs disrupt HSV-1 by blocking viral DNA replication. The downside to these antivirals is that viruses can mutate and evade the suppression effects. “Patients who develop resistance to nucleoside analogs have very few good options for treating their infection,” Dr. Shukla explained.

This is where Dr. Shukla’s study comes into play. Dr. Shukla and his team began studying HSV-1 hoping for a better understanding of the virus’ functioning. The molecule BX795 is a known inhibitor of TBK1, an enzyme that promotes host immune response. The team assumed BX795, by suppressing the immune response, would allow HSV-1 to propagate quickly.

To their surprise, BX795 reduced the herpes infection when applied to infected human corneal epithelial cells. Additional in-vitro testing replicated these results, and showed no toxicity to the cells. The researchers tested BX795 against four of the most common nucleoside analogs. BX795 worked as well or slightly better at suppressing HSV-1, at much lower concentrations.

Further testing in the lab confirmed HSV-1 suppression in mouse models, human primary cells, and ex vivo human and porcine corneas. Dr. Shukla and team continued testing to determine how BX795 was producing antiviral effects. They determined BX795 was preventing Akt phosphorylation in affected cells. Akt plays a role in protein synthesis in host cells, and HSV-1 is known to manipulate the Akt pathway to synthesize viral proteins and aid in viral replication. By blocking the Akt pathway, BX795 prevents the HSV-1 virus from hijacking the host protein pathway. “We have found a molecule that works in a totally novel fashion. Instead of working on the virus, it works in the host cells and helps them to clear the virus,” Dr. Shukla said of the results.

Because BX795 targets protein synthesis in the host cell, it has a broader potential impact than current treatments. Targeted viruses, like HSV-1, are able to adapt and circumnavigate direct treatment attempts; BX795 blocks the cell machinery that viruses use to replicate. Many viruses are known to use this machinery in similar ways.

“This is most likely not going to be specific to HSV-1. We have already tested it with genital herpes [HSV-2], and it blocks genital herpes very well. A group of other viruses: HIV, human papilloma virus, adenoviruses…all seem to use this host protein for their own synthesis,” Dr. Shukla says. “A broad-spectrum antiviral could be generated out of this discovery.”

This potential for a broad-spectrum antiviral is perhaps the most exciting part of Dr. Shukla’s discovery. No treatment to date has been able to target disparate viruses effectively. As additional testing progresses, Dr. Shukla and his team at the IEEI are hoping for more good news.

Dr. Shukla is Vice Chair for Research, the Marion H. Schenk Esq. Professor in Ophthalmology for Research of the Aging Eye, and Director of the Ocular Virology Laboratory. In addition to his appointment in Ophthalmology, he is a Professor of Microbiology and Immunology at UIC.
IMAGE: Dr. Shukla at work in the Ocular Virology Laboratory
INSET: Molecular model of BX795
The residents in the Department of Ophthalmology and Visual Sciences at the Illinois Eye and Ear Infirmary fulfill an integral role in our mission to diagnose and treat the most serious and complicated cases in ophthalmology. For over 150 years, the Illinois Eye and Ear Infirmary has been a leader in improving the diagnosis, management and treatment of blinding eye diseases through science, clinical and surgical innovations, and top-ranked education programs. The Residency Program at the Illinois Eye and Ear Infirmary molds future clinician researchers into exceptional world-class leaders in the field of ophthalmology.

Manual Small Incision Cataract Surgery (MSICS) Course

In September 2018, UIC alumnus Daniel Alter, MD, PhD, (Residency ‘96, Fellowship ‘98) and the Division of Global Ophthalmology in the Department of Ophthalmology and Visual Sciences hosted a Manual Small Incision Cataract Surgery (MSICS) course in collaboration with Surgical Eye Expeditions International (SEE International), a leading sight-restoring nonprofit humanitarian organization. The course was designed to provide ophthalmology residents and fellows with exposure to MSICS, which is commonly performed in resource-limited settings.

Residents and fellows in the Department engaged in this full day didactic and wet-lab session held in the state-of-the-art Cless Ophthalmic Surgical Training and Simulation Center. The lab includes nine surgical simulation stations, each with two surgical microscopes. Trainees, along with UIC and SEE International expert volunteers, worked intimately to refine their surgical skills.

Dr. Daniel Alter is a Clinical Assistant Professor in the Department, as well as a University of Illinois alumnus ’83, MD/PhD ’92, Residency ’96, and Vitreoretinal Fellowship ’98. He received the 2017 SEE International Humanitarian of the Year Award for his commitment to providing vision care to the people of Haiti, among the poorest country in the Western Hemisphere.

Retina Fellows Institute

Yannek I. Leiderman, MD, PhD, Associate Professor of Ophthalmology, in partnership with Alcon, developed a new comprehensive retina fellow experiential training program, the Retina Fellows Institute. The inaugural Retina Fellows Institute session was held at the Alcon Experience Center in Fort Worth, Texas in November 2018. Dr. Leiderman, Program Director, welcomed a group of 40 retina fellows from 22 fellowship programs by saying, “The Retina Fellows Institute was conceived out of a desire to expand our surgical teaching paradigm beyond didactic instruction and supervised surgery.”

Dr. Leiderman describes the program and his experience: “The Retina Fellows Institute is a first-in-class surgical simulation laboratory course using high-fidelity models of commonly encountered surgical pathology allowing for hands-on skills transfer. Developing surgical models presented a unique challenge requiring the design of synthetic surgical pathology adapted to existing simulation technology. Bringing together world-class surgical teachers with fellows in vitreoretinal surgery from around the country in a state-of-the-art surgical simulation facility equipped with a full array of surgical instrumentation was a remarkable accomplishment. It was a privilege to be part of a team with such wide-ranging expertise. At the heart of this collaborative effort was a core of truly gifted surgical teachers and a leader in the ophthalmic surgical industry. Ultimately, we had one shared goal - to further the development of the next generation of vitreoretinal surgeons.”

Dr. Leiderman speaks at the Retina Fellows Institute.
In low and middle-income countries with improving neonatal care, the rate of infant blindness is increasing.

As babies are delivered at increasingly younger gestational ages, retinopathy of prematurity (ROP) - one of the world’s leading causes of infant blindness - is on the rise. Continuing its long tradition of global ophthalmic care, the Department of Ophthalmology and Visual Sciences at the Illinois Eye and Ear Infirmary is working to reverse this trend.

In collaboration with the International Pediatric Ophthalmology & Strabismus Council (IPOSC), the IEEI hosted the inaugural IPOSC ROP Africa Symposium in September 2018. R.V. Paul Chan, MD, MSc, MBA, FACS and Marilyn Miller, MD, co-directors of the IEEI’s Division of Global Ophthalmology, and Jenny Baker, MA, Administrative Manager and Research Coordinator of the Division, organized the ambitious project with their colleagues in Africa. The international symposium was held at the Red Cross War Memorial Children’s Hospital in Cape Town, South Africa, and brought together 109 professionals from around the world to address the current and future management of ROP in Sub-Saharan Africa (SSA).

The meeting location was chosen due to the region’s increasing rates of ROP in neonatal infants. While neonatal care is improving broadly across SSA, many hospitals do not have the training or resources to manage ROP cases. Therefore, a major goal of the IPOSC ROP Africa Symposium was to assist ophthalmology teams in their diagnosis, management and treatment of ROP.

Thanks to the generous support of the Knights Templar Eye Foundation, Inc., IPOSC was able to provide education grants for selected ROP teams from SSA to attend the symposium. Seven potential centers of excellence were identified and 28 grant recipients attended the symposium. Three teams represented Nigerian hospitals, while the remaining four came from Ethiopia, Ghana, Kenya, and Zimbabwe.

The multi-day symposium brought together professionals from 13 different countries. Participants attended presentations from renowned international faculty, with topics including epidemiology, neonatology, and diagnosis of ROP. Focused workshops - including a leadership development course and hands-on skills transfer labs - provided practical tools for continuing ROP advocacy and clinical care in SSA.

Feedback from attendees showed an appreciation for the diverse faculty presentations as well as the hands-on workshops. Some of the teams arrived with no ROP unit in their hospital and left the symposium with concrete plans to begin treating ROP, using the skills gained at the symposium. Dr. Ngaatendwe Mataswa, a member of the Zimbabwe grantee team, summarized his renewed dedication to treatment: “It was a great learning experience... hearing from the experts who have been dealing with this disease has made me more confident in my approach to these patients.”

“Hearing from the experts who have been dealing with this disease has made me more confident in my approach to these patients.”

Narendran Venkatapathy, DO, DNB, Chief Medical Officer of Aravind Eye Hospital, leads a workshop at the IPOSC ROP Africa Symposium.

Drs. Miller and Chan speak to attendees of the IPOSC ROP Africa Symposium.
OPHTHALMOLOGISTS IN TRAINING: 2018-2019

RESIDENTS

THIRD YEAR (Class of 2019)
Grace Dunbar, MD
MD—University of Michigan

Omar Hassan, MD
MD—University of Illinois at Chicago

Lindsay Machen, MD
Co-Chief Resident
MD—Pennsylvania State University

Wyatt Messenger, MD
MD—Oregon Health & Sciences University

Taylor Starnes, MD, PhD
Co-Chief Resident
MD/PhD—University of Wisconsin School of Medicine and Public Health

Alisa Thavikulwat, MD
MD—University of Rochester

SECOND YEAR (Class of 2020)
Kelley Bohm, MD
MD—Weill Cornell Medical College

Talisa de Carlo, MD
MD—Tufts University School of Medicine

Judy L. Chen, MD
MD—David Geffen School of Medicine at UCLA

Priyanka Chhadva, MD
MD—Miller School of Medicine, University of Miami

Levi Kanu, MD
MD—Perelman School of Medicine, University of Pennsylvania

Daniel Oh, MD
MD—Harvard Medical School

FIRST YEAR (Class of 2021)
Samuel Burke, MD
MD—University of Miami Medical School

Emily Cole, MD, MPH
MD/MPH—Tufts University School of Medicine

Lawrence Geyman, MD
MD—Icahn School of Medicine at Mount Sinai

Rajvi Mehta, MD
MD—Duke University School of Medicine

Nita Valikodath, MD, MS
MD—University of Michigan Medical School

Ivy Zhu, MD
MD—University of Illinois at Chicago College of Medicine
Resident International Experiences

ROP Screening in India

Retinopathy of prematurity (ROP) is a leading cause of blindness in infants worldwide. In the United States there are well-established screening criteria to help identify infants that should be examined for ROP. Internationally, however, there is no clear consensus regarding cutoffs for birth weight and gestational age, or criteria for the severity of ROP. In an effort to understand the characteristics of the international ROP population and the process of screening, first-year resident Nita Valikodath, MD, MS spent time at Aravind Eye Hospital (AEH) in Coimbatore, India.

ROP screening examinations were performed in rural parts of Tamil Nadu and Kerala using digital retinal imaging with the RetCam Shuttle and indirect ophthalmoscopy. Images were sent to the base hospital at AEH, interpreted, and transmitted back to the physician at the rural hospital within minutes. Dr. Valikodath witnessed firsthand how the Retinopathy of Prematurity - Save Our Site (ROPE-SOS) Program, supported by the United States Agency for International Development (USAID), provided care to hundreds of children at risk of developing blinding disease.

ROP Screening in Nepal

First-year resident Emily Cole, MD, MPH, traveled to Nepal to assess a retinopathy of prematurity (ROP) screening program in the Kathmandu Valley. The program, which utilizes telemedicine and digital imaging, is a collaboration between the United States Agency for International Development (USAID), Helen Keller International, the Tilganga Institute of Ophthalmology, and The Global Education Network for Retinopathy of Prematurity (GEN-ROP). In Kathmandu, Dr. Cole worked at the Tilganga Institute of Ophthalmology, where she assisted with data management of over 600 screened newborns, met with stakeholders, and participated in planning for expansion into district-level hospitals. She is working with Dr. R.V. Paul Chan to develop novel ways of training healthcare providers for ROP care in both the US and abroad.

Dr. Valikodath (center) with colleagues at the Aravind Eye Hospital

Dr. Cole in Kathmandu Valley, Nepal
OPHTHALMOLOGISTS IN TRAINING (CONTINUED)

CLINICAL FELLOWS

2016-17

**CORNEA**
- Debora Garcia-Zalisnak MD
  - MD—University Of Puerto Rico School Of Medicine
  - Residency—Eastern Virginia Medical School

**CORNEA**
- Praneetha Thulasid MD
  - MD—Emory University School of Medicine
  - Residency—Emory University

**GLAUCOMA**
- Ruchi Shah, MD
  - MD—University of Illinois at Chicago
  - Residency—Loyola University Medical Center

**NEURO-OPHTHALMOLOGY**
- Susiani Intan, MD
  - MD—Sun Yat-sen University of Medical Sciences
  - Residency in Neurology—Medical College of Wisconsin

**PEDIATRIC OPHTHALMOLOGY**
- Majid Rouhbakhshezari, MD
  - MD—Masah Dar University of Medical Sciences
  - Residency—Masah Dar University of Medical Sciences

**RETINA**
- Randee M. Watson, MD
  - MD—Wayne State University
  - Residency—Illinois Eye and Ear Infirmary

**CORNEA**
- Salima Hassanaly, MD
  - MD—University of Montreal Faculty of Medicine
  - Residency—University of Montreal

**GLAUCOMA**
- Mark Dikopf, MD
  - MD—University of Illinois at Chicago
  - Residency—Illinois Eye and Ear Infirmary

**NEURO-OPHTHALMOLOGY**
- Omar Solyman, MD
  - MD—Cairo University School of Medicine
  - Residency—Research Institute of Ophthalmology, Giza, Egypt

**OCULOPLASTIC SURGERY**
- Catherine Liu, MD, PhD
  - MD & PhD—Albert Einstein College of Medicine
  - Residency—University of California, Irvine

**PEDIATRIC OPHTHALMOLOGY**
- Samiksha Fouzdar Jain, MD
  - MD—BJ Medical College, Pune, India
  - Residency—Sankara Eye Hospital, Coimbatore, India

**RETINA**
- Yi Jiang, MD
  - MD—Rush Medical College
  - Residency—Rush University Medical Center

2017-18

**CONTACT LENS**
- Jennifer Vicente, OD
  - OD—New England College of Optometry
  - Residency in Optometry—Omni Eye Services of New Jersey and New York

**CORNEA**
- Salima Hassanaly, MD
  - MD—University of Montreal Faculty of Medicine
  - Residency—University of Montreal

**CORNEA**
- Kai Kang, MD
  - MD—Weill Cornell Medical College
  - Residency—Illinois Eye and Ear Infirmary

**GLAUCOMA**
- Mark Dikopf, MD
  - MD—University of Illinois at Chicago
  - Residency—Illinois Eye and Ear Infirmary

**NEURO-OPHTHALMOLOGY**
- Omar Solyman, MD
  - MD—Cairo University School of Medicine
  - Residency—Research Institute of Ophthalmology, Giza, Egypt

**OCULOPLASTIC SURGERY**
- Catherine Liu, MD, PhD
  - MD & PhD—Albert Einstein College of Medicine
  - Residency—University of California, Irvine

**PEDIATRIC OPHTHALMOLOGY**
- Samiksha Fouzdar Jain, MD
  - MD—BJ Medical College, Pune, India
  - Residency—Sankara Eye Hospital, Coimbatore, India

**RETINA**
- Evan Dunn, MD
  - MD—University of Miami Miller School of Medicine
  - Residency—Indiana University School of Medicine

**RETINA**
- Yi Jiang, MD
  - MD—Rush Medical College
  - Residency—Rush University Medical Center
2018-19

CONTACT LENS
Vidi Shah, OD
OD—Western University of Health Sciences College of Optometry
Residency in Optometry—Erdey Searcy Eye Group

CORNEA
Julie Goldman, MD
MD—Columbia University
Residency—Illinois Eye and Ear Infirmary

CORNEA
Jennifer Park, MD
MD—Albert Einstein College of Medicine
Residency—New York Eye and Ear Infirmary of Mount Sinai

GLAUCOMA
Amy Mohla, MD
MD—New York Medical College
Residency—Bronx Lebanon Hospital Center

NEURO-OPHTHALMOLOGY
Brooke Johnson, DO
DO—Michigan State University
College of Osteopathic Medicine
Residency in Neurology—Advocate BroMenn Medical Center

OCULOPLASTIC SURGERY
Chau Pham, MD
MD—Case Western Reserve University
Residency—Washington University in St Louis

PEDICTRIC OPHTHALMOLOGY
Daniel Maidana, MD
MD—University of Buenos Aires
Residency—University of Barcelona

RETINA
Matthew Byun, MD
MD—Wright State University
Residency—University of Cincinnati

RETINA
Ru-ik Chee, MD
MD—Trinity College Dublin
Residency—Weill Cornell Medical College

RETINA
Sarwar Zahid, MD
MD—University of Michigan
Residency—New York University

VITREORETINAL SURGERY
Nicole Scripsema, MD
MD—New York Medical School
Residency—New York Eye and Ear Infirmary of Mount Sinai
Medical Retina and Uveitis Fellowship—Moorfields Eye Hospital

INTERNATIONAL FELLOWS

CORNEA
Andrea Arteaga Useche, MD
MD—Universidad Central de Venezuela, Caracas, Venezuela
Residency—Universidad de los Andes-Fundacion Avao, Caracas, Venezuela

CORNEA
Joao Crispim, MD
MD—Federal University of Ceara, Fortaleza, Brazil
Residency—Federal University of São Paulo, São Paulo, Brazil

CORNEA
Pedro Gil, MD
MD—University of Coimbra, Coimbra, Portugal
Residency—Centro Hospitalar Universitário de Coimbra, Coimbra, Portugal

BERNARD AND JENNIE NELSON
CORNEA AND KPRO FELLOW
Faris I. Karas, MD
MD—Ain Shams University, Cairo, Egypt
Residency—Ain Shams University, Cairo, Egypt

CORNEA
Carmen Somavilla Bueno, MD
MD—School of Medicine, University of Málaga, Málaga, Spain

OCULOPLASTIC SURGERY
Duangmontree Rojdamrongratana, MD
MD—Mahidol University, Bangkok, Thailand
Residency—Thammasat University, Bangkok, Thailand

RETINA
Alvaro Fernández-Vega González, MD
MD—Complutense University of Madrid, Madrid, Spain
Residency—Barraquer Ophthalmology Center, Barcelona, Spain

RETINA
Shin Hae Park, MD, PhD
MD & PhD—The Catholic University of Korea, Seoul, South Korea
Residency—Kangnam St. Mary’s Hospital, The Catholic University of Korea, Seoul, South Korea

RETINA
Sulaiman Al Sulaiman, MD
MD—King Saud University, Riyadh, Saudi Arabia
Residency—King Khaled Eye Specialist Hospital, Riyadh, Saudi Arabia
Prompt screening and early diagnosis of eye diseases is essential to preventing visual impairment and blindness. Many eye diseases, such as diabetic retinopathy and retinopathy of prematurity, can target the retinal periphery. Wide-field fundus photography is therefore desirable for screening, diagnosis, and treatment evaluation. In order to explore affordable telemedicine and point-of-care options, multiple portable or smartphone-based fundus cameras have been introduced. Unfortunately, the existing commercially-available portable fundus cameras have a limited field of view (FOV), and frequently require pupillary dilation for the examination of the retinal periphery. The UIC Biomedical Optics and Functional Imaging Laboratory directed by Xincheng Yao, PhD, Professor of Bioengineering and Ophthalmology, has recently demonstrated a novel design for a miniaturized indirect ophthalmoscope.

This design enables the manufacture of a low-cost, wide-field, smartphone fundus camera (Image 1). The lab-built smartphone fundus camera is wireless, with a total weight of 255 g. This work has been featured as a ‘New Instruments’ article in RETINA, the journal of retinal and vitreous diseases (Retina 38, 438-441, 2018). By integrating near-infrared guidance, the miniaturized indirect ophthalmoscope enables a non-mydriatic fundus camera with a snapshot field of view (FOV) up to 67° external-angle (101° eye-angle) (Image 2).

“This UIC Biomedical Optics and Functional Imaging Laboratory novel miniaturized indirect ophthalmoscopy achieves a wide angled image of the retina that is useful for telescreening applications. There is a need for low-cost, wide-field imaging of diabetic patients in order to screen them for diabetic retinopathy (DR). This camera may prove useful as it is easy to use, portable and produces high quality images comparable to large fundus cameras. I am excited to begin a large-scale study comparing photos taken with this system to that of the standard non-portable fundus cameras.” - Jennifer I. Lim, MD, FARVO.

For the proof-of-concept demonstration, the lab-built prototype fundus cameras were constructed using all off-the-shelf components. Dr. Yao anticipates that there is still ample room for further improvement of the FOV and image quality.

This endeavor promises a next-generation low-cost, non-mydriatic, wide-field fundus camera for affordable telemedicine and point-of-care assessment of eye diseases without dilation of the pupil. The lab-built prototype has led to a patent application, and a commercialization plan is under development in collaboration with an industry partner.

R.V. Paul Chan, MD, MSc, MBA, FACS has been a clinical collaborator on this project: “The novel design of this device provides an innovative answer to a clinical need. The collaboration between Bioengineering and Ophthalmology at UIC is a major strength of our institution and will translate into improved patient care.”
A NEW MODEL FOR RESEARCH
Ocular GVHD Clinic combines treatment, translational laboratory, and clinical trials

The only established curative treatment for blood cancers, such as leukemia, lymphoma, or myeloma, is to perform a bone marrow transplant. However, within a year after bone marrow transplantation, approximately 50% of patients develop severe inflammation of the ocular surface that presents as a disabling, painful dry eye. This eye condition is termed ocular Graft-versus-Host Disease (oGVHD).

Currently there are no approved therapies for treating oGVHD; thus, oGVHD represents an unmet medical need. To fill this gap, the Department of Ophthalmology and Visual Sciences has established a unique translational research program that makes feasible the discovery and development of novel treatments for oGVHD. This program is comprised of a highly specialized oGVHD clinic for patient care, an advanced translational molecular biology laboratory for uncovering disease mechanisms, a dedicated clinical trial center for developing new therapies, and a highly motivated team who seamlessly connect these components. In addition, The goGVHD Fund has been established at UIC to support efforts to provide the best care and treatment to all patients with oGVHD irrespective of their ability to pay and to lead the next generation of innovation to cure this disease.

Sandeep Jain, MD heads the ocular GVHD Clinic at the IEEI. The clinic transcends the scope of traditional ophthalmological practice to enable the team to address the complexities of oGVHD management. The clinic houses state-of-the-art diagnostic equipment to assess the development and severity of the disease, and uses customized therapies to treat oGVHD and novel biomarkers to assess the response to treatment.

Dr. Jain’s team has made breakthroughs in the Translational Biology Laboratory to uncover mechanisms that lead to oGVHD and discovery of new potential treatments. His team was the first to discover the role of neutrophil extracellular traps (NETs) in pathology of oGVHD. This has led to clinical trials funded by the National Eye Institute/NIH to assess the efficacy of the new therapies based on this novel mechanism of inflammation. They were also the first group to propose the use of Brimondine, DNase I and Sub-Anticoagulant dose Heparin eye drops for treating oGVHD. Based on their research, Brimonidine became the first drug to receive “orphan drug” designation for treatment of oGVHD by US FDA.

Our Translational Research Model

TOP LEFT IMAGE: (left to right) Dr. Sandeep Jain, Christine Mun, and Dr. Ellen Shorter
TOP MIDDLE IMAGE: The Chronic GVHD Meeting, 2017, NIH-funded and co-directed by Dr. Jain
The Division of Global Ophthalmology in the Illinois Eye and Ear Infirmary (IEEI) at UIC is committed to caring for underserved populations on both a local and international level. Working globally means not seeing any boundaries between the people and locations you serve: there is need everywhere and as global ophthalmologists we are always looking for opportunities to address those needs.

Internationally, our faculty has provided ophthalmological care and education in more than 75 countries. Their work includes the Thai Eye Study with Thammasat University in Bangkok, Thailand, collaborative programs with the Aravind Eye Hospital in Coimbatore, India, and many other projects. Our faculty members are global leaders in ophthalmology and we have worked closely with international partners to organize educational programs around the world, including the International Pediatric Ophthalmology & Strabismus Council (IPOSC) ROP Africa Symposium in Cape Town, South Africa. Locally, we have very active community outreach programs and partner with the Chicago Bulls to offer free annual eye screenings to underserved members of the community. We also have a longstanding partnership with the Lions of Illinois, and co-sponsor many projects with them.

Training and inspiring the next generation of global ophthalmologists is essential to sustaining the work of our Division of Global Ophthalmology. Residents at the IEEI have the opportunity to participate in a one-week residency exchange with Federal University of São Paulo in São Paulo, Brazil, and all second year residents take part in a two week exchange program with Keio University in Tokyo, Japan. In addition we offer customized international fellowships to IEEI fellows. Monthly teleconference participation in the neuro-ophthalmology journal club at Aravind Eye Hospital (Coimbatore, India) also contributes to our ongoing global information exchange.

We are proud to partner with leading organizations in promoting health equity. We are members of the International Agency for the Prevention of Blindness (IAPB), and have ongoing collaborations with IPOSC, Orbis International, and Helen Keller International.
CORNEA AND REFRACTIVE SURGERY

The Cornea and External Disease Service manages patients with diseases of the front of the eye including corneal and conjunctival infections, keratoconus, cataracts, tumors of the iris and conjunctiva, blepharitis, dry eye, corneal scarring, complications of trauma and ocular surgery as well as hereditary corneal diseases like Fuchs’ Dystrophy. The service has extensive expertise in all forms of minimally invasive, selective corneal transplantation including DMEK, DSAEK/ DSEK, and DALK as well as traditional penetrating keratoplasty that provides patients with the widest array of treatment options. Our service helped pioneer collagen crosslinking as treatment for the management of progressive keratoconus. Those not eligible for human corneal transplantation may qualify for our Artificial Cornea Program, which is the largest program of its kind in the Midwest for implanting keratoprostheses. The service also provides access to state-of-the-art imaging technology to quickly and accurately diagnose a wide spectrum of diseases. Cornea specialists also work with the Contact Lens Service to offer advanced contact lens therapies including the PROSE lens and offer the opportunity to participate in the latest clinical trials for dry eye diseases, corneal transplantation and corneal infections.

DIRECTOR
Elmer Y. Tu, MD
Professor of Clinical Ophthalmology
Director, Cornea Service
Director of the Cornea Fellowship Program

MEDICAL SCHOOL
University of Miami

RESIDENCY IN OPHTHALMOLOGY
University of Wisconsin

CLINICAL FELLOWSHIP
Bascom Palmer Eye Institute (Cornea)

Clinical Interests
Corneal transplantation including DMEK, DSAEK, DALK and full thickness corneal transplantation; Corneal infections and corneal inflammatory disorders; Complex and routine cataract surgery

Research Interests
Corneal infections and inflammation; Corneal transplantation; New surgical and drug therapies
Dimitri T. Azar, MD, MBA, FARVO
Distinguished Professor of Ophthalmology, Bioengineering and Pharmacology
B.A. Field Chair in Ophthalmologic Research

MEDICAL SCHOOL
American University of Beirut, Lebanon

RESIDENCY IN OPHTHALMOLOGY
Massachusetts Eye and Ear Infirmary

CLINICAL FELLOWSHIP
Massachusetts Eye and Ear Infirmary (Cornea)

RESEARCH FELLOWSHIP
Schepens Eye Research Institute (Cornea)

GRADUATE SCHOOL
University of Chicago (MBA)

Clinical Interests
Laser Vision Correction; Cornea and Cataract Surgery

Research Interests
Matrix metalloproteinases in corneal wound healing and angiogenesis; Refractive surgery; Optics; Accommodating intraocular lenses

M. Soledad Cortina, MD
Associate Professor of Ophthalmology
Director, Comprehensive Ophthalmology Faculty Practice (COFP) and General Eye Clinic
Director, Artificial Cornea Program
Co-Director, Cornea Fellowship Program

MEDICAL SCHOOL
University of Buenos Aires School of Medicine, Argentina

RESIDENCY IN OPHTHALMOLOGY
University of Buenos Aires School of Medicine, Argentina

CLINICAL FELLOWSHIP
Illinois Eye and Ear Infirmary (Cornea)

RESEARCH FELLOWSHIP
Louisiana State University, Neuroscience Center

Clinical Interests
Ocular surface disease and high-risk corneal transplantation including Boston keratoprosthesis; Cataract surgery and endothelial keratoplasty

Research Interests
Retroprosthetic membrane formation in Boston keratoprosthesis patients; Optical properties of artificial corneas; Corneal nerves & their regeneration after injury

Jose de la Cruz, MD
Assistant Professor of Ophthalmology
Co-Director, Millennium Park Eye Center

MEDICAL SCHOOL
Ponce School of Medicine, Puerto Rico

RESIDENCY IN OPHTHALMOLOGY
New York Eye and Ear Infirmary

CLINICAL FELLOWSHIP
Massachusetts Eye and Ear Infirmary, Harvard Medical School (Cornea, Refractive)
Illinois Eye Ear Infirmary (Refractive)

GRADUATE SCHOOL
Indiana University at Bloomington (MS)

Clinical Interests
Advances in keratoprosthesis transplantation; Anterior segment imaging in corneal and refractive surgery; Femtosecond technology for corneal transplantation; Laser assisted cataract surgery; Keratoconus; Intracorneal ring segments; Corneal crosslinking

Research Interests
Development of surgical devices for conjunctival manipulation; New techniques in refractive surgery and femtosecond assisted keratoplasty; Advanced technology intraocular lenses for correction of presbyopia and astigmatism
Ali R. Djalilian, MD  
Professor of Ophthalmology  
Director, Corneal Stem Cell and Tissue Engineering Laboratory  
Co-Director of the Cornea and External Disease Service  
MEDICAL SCHOOL  
University of Minnesota  
RESIDENCY IN OPHTHALMOLOGY  
University of Minnesota  
CLINICAL FELLOWSHIP  
Cincinnati Eye Institute (Cornea)  
National Eye Institute / NIH (Uveitis)  
RESEARCH FELLOWSHIP  
University of Minnesota (Cornea)  
National Eye Institute (Ocular Immunology)  
National Eye Institute and National Human Genome Research Institute (Epithelial Biology)  
Clinical Interests  
Ocular surface disease; Limbal stem cell deficiency; Corneal and limbal stem cell transplantation; Immunologic diseases of the cornea  
Research Interests  
Stem cell based therapy; Corneal wound healing; Tissue engineering

Sandeep Jain, MD  
Professor of Ophthalmology  
Director, Translational Biology Laboratory  
Director, Dry Eye & ocular GVHD Clinic  
MEDICAL SCHOOL  
University of Delhi, India  
RESIDENCY IN OPHTHALMOLOGY  
Harkness Eye Institute, Columbia University  
CLINICAL FELLOWSHIP  
Massachusetts Eye and Ear Infirmary, Harvard Medical School (Cornea)  
RESEARCH FELLOWSHIP  
Wilmer Eye Institute (Cornea), The Johns Hopkins Medical School  
Clinical Interests  
Dry Eye and ocular surface disease; Ocular graft-versus-host-disease; Neurotrophic keratitis  
Research Interests  
Molecular and cellular aspects of ocular surface disease; Translational research; Clinical Trials

Kai Kang, MD  
Assistant Professor of Ophthalmology  
MEDICAL SCHOOL  
Cornell University Medical College  
RESIDENCY IN OPHTHALMOLOGY  
Illinois Eye and Ear Infirmary  
CLINICAL FELLOWSHIP  
Illinois Eye and Ear Infirmary (Cornea)  
Clinical Interests  
Ocular surface disease; Corneal transplantation including penetrating keratoplasty and endothelial keratoplasty; Ocular surface tumors; Cataract surgery  
Research Interests  
Corneal wound healing; Ocular surface stem cells; Genetics of stem cells and ocular surface neoplasia

Mark I. Rosenblatt, MD, PhD, MBA  
Executive Dean of the College of Medicine  
Professor of Ophthalmology  
Illinois Lions/Charles I. Young Chair in Ocular Research  
Director, Corneal Regenerative Medicine Laboratory  
MEDICAL SCHOOL  
University of Miami (PhD, Biochemistry)  
RESIDENCY IN OPHTHALMOLOGY  
Massachusetts Eye and Ear Infirmary  
CLINICAL FELLOWSHIP  
Massachusetts Eye and Ear Infirmary (Cornea)  
RESEARCH FELLOWSHIP  
Scheepens Eye Research Institute  
GRADUATE SCHOOL  
New York University (MBA)  
Clinical Interests  
Corneal disease; Cataract; Refractive surgery; Ocular pain; Dry Eye disease; Keratoplasty  
Research Interests  
Ocular regenerative medicine; Corneal stem cells; Corneal nerve regeneration; Angiogenesis; Tissue engineering; Biomaterials; Nanomedicine

Joel Sugar, MD  
Joel Sugar MD Professor in Ophthalmology  
MEDICAL SCHOOL  
University of Michigan  
RESIDENCY IN OPHTHALMOLOGY  
Washington University, St. Louis  
CLINICAL FELLOWSHIP  
University of Florida, Gainesville (Cornea)  
Clinical Interests  
Corneal disorders; Herpes simplex; Herpes zoster; Congenital anomalies of the anterior eye  
Research Interests  
Keratoplasty outcomes; Herpes; Fuchs’ dystrophy
CONTACT LENS

The Contact Lens Service provides care to patients requiring medically necessary contact lenses and related services. Our doctors are nationally known for their clinical and research expertise and their ability to help patients with various complex corneal diseases including: Keratoconus, Post-corneal transplant management, Dry eye syndrome, Graft-versus-host disease (GVHD), Limbal stem cell deficiency, Sjögren’s syndrome, Neurotrophic keratitis, Corneal scarring, Stevens-Johnson syndrome, Post-LASIK, and Aphakia. We have extensive experience with all types of medically necessary contact lenses including scleral, hybrid and rigid contact lenses as well as customized soft contact lenses. The service’s Prosthetic Replacement of the Ocular Surface Ecosystem (PROSE) clinic is one of only 12 clinic sites in America to offer BostonSight® PROSE treatment for patients with severely compromised ocular function as a result of complex corneal disease.

DIRECTOR

Charlotte E. Joslin, OD, PhD, FAAO
Associate Professor of Ophthalmology
Department Affiliate, Epidemiology and Biostatistics
Director, Contact Lens Service

OPTOMETRY SCHOOL
Ohio State University College of Optometry

RESIDENCY IN OPTOMETRY
Jesse Brown VA Medical Center and
Blind Rehabilitation Center of Hines VA Hospital

GRADUATE SCHOOL
University of Illinois at Chicago (PhD, Epidemiology)

Clinical Interests
Medically necessary contact lenses for diseases such as: Keratoconus; Post-corneal transplant; Dry eye; Graft-versus-host disease (GVHD); Limbal stem cell deficiency, Sjögren’s syndrome, Neurotrophic keratitis; Corneal scarring; Stevens-Johnson syndrome; Post-LASIK

Research Interests
Epidemiology of various eye diseases and infections; Racial differences in various eye and other health-related outcomes
**Timothy T. McMahon, OD, FAAO**

Professor of Ophthalmology  
Vice Chair for Optometry  

**OPTOMETRY SCHOOL**  
Illinois College of Optometry  

**RESIDENCY IN OPTOMETRY**  
Kansas City VA Medical Center  

**Clinical Interests**  
Medically necessary contact lenses; Corneal topography; Anterior segment diseases and injuries  

**Research Interests**  
Keratoconus and other corneal ectatic conditions and diseases; Dry eye; Blepharitis

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**Ellen Shorter, OD, FAAO**

Assistant Professor of Ophthalmology  
Director, Prosthetic Replacement of the Ocular Surface Ecosystem (PROSE) Clinic  

**OPTOMETRY SCHOOL**  
Illinois College of Optometry  

**RESIDENCY IN OPTOMETRY**  
Jesse Brown VA Medical Center and Hines VA Hospital  

**CLINICAL FELLOWSHIP**  
Boston Foundation for Sight (PROSE)  

**Clinical Interests**  
Ocular surface disease; Corneal ectasia; Keratoconus; Keratoprosthesis  

**Research Interests**  
Dry eye; Adenoviral conjunctivitis

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**Angelica Scanzera, OD, FAAO**

Assistant Professor of Ophthalmology  

**OPTOMETRY SCHOOL**  
New England College of Optometry  

**RESIDENCY IN OPTOMETRY**  
Captain James A. Lovell Federal Health Care Center  

**CLINICAL FELLOWSHIP**  
University of Illinois at Chicago (Advanced Medically Necessary Contact Lenses)  

**Clinical Interests**  
Medically necessary contact lenses for ocular surface disease (Dry Eye, Graft-versus-Host Disease, limbal stem cell deficiency, Sjögren’s, Stevens Johnson Syndrome) and corneal irregularity (keratoconus, post-corneal transplant, corneal scarring, post-LASIK, trauma)  

**Research Interests**  
Ocular surface disease; Scleral lenses; Access to care; Telemedicine
GLAUCOMA

Glaucoma is the leading cause of irreversible blindness in the world. Our Glaucoma Service is nationally recognized as a center for the diagnosis and treatment of glaucoma in adults and children. It is a site for testing investigational new drugs and has been a leader in the use of laser and surgery to treat all forms of the disease. Our service offers comprehensive care and management of all forms of glaucoma, including specialized diagnostic testing and the latest technologies for laser and surgical treatment. Faculty members are actively involved in glaucoma research and are nationally recognized as experts in their field.

DIRECTOR

Thasarat S. Vajaranant, MD
Associate Professor of Ophthalmology
Director, Glaucoma Service

MEDICAL SCHOOL
Chulalongkorn University, Thailand

RESIDENCY IN OPHTHALMOLOGY
Illinois Eye and Ear Infirmary

CLINICAL FELLOWSHIP
Illinois Eye and Ear Infirmary (Glaucoma)

RESEARCH FELLOWSHIP
Illinois Eye and Ear Infirmary (Low Vision)

Clinical Interests
Diagnosis and management of glaucoma and cataract; Management of complex glaucoma and cataract; International ophthalmology

Research Interests
Glaucoma epidemiology; Women’s eye health; Aging of the optic nerve; Outcomes of glaucoma surgery; Management of glaucoma after corneal transplants

IMAGE: Fundus photo highlighting optic nerve of glaucoma patient, courtesy of the Glaucoma Service
Ahmad A. Aref, MD, MBA  
Associate Professor of Ophthalmology  
Chief Quality Officer  
Director, Residency Training Program  
MEDICAL SCHOOL  
Northwestern University  
RESIDENCY IN OPHTHALMOLOGY  
Penn State Hershey Eye Center  
CLINICAL FELLOWSHIP  
Bascom Palmer Eye Institute (Glaucoma)  
GRADUATE SCHOOL  
University of Chicago (MBA, Economics and Strategic Management)  
Clinical Interests  
Complex cataract surgery; Trabeculectomy and glaucoma drainage implant surgery for advanced glaucomatous disease; Micrinovasive glaucoma surgery for mild/moderate glaucomatous disease; Selective laser trabeculoplasty for open-angle glaucomas; Laser iridotomy for angle-closure glaucomas  
Research Interests  
Surgical techniques in complex glaucomas; Glaucoma associated with retinal disorders; Novel glaucoma medical therapies; Ophthalmic nerve imaging

Deepak P. Edward MD, FACS, FARVO  
Professor of Ophthalmology  
MEDICAL SCHOOL  
St Johns Medical College, Bangalore, India  
RESIDENCY IN OPHTHALMOLOGY  
Illinois Eye and Ear Infirmary  
CLINICAL FELLOWSHIP  
Washington University School of Medicine (Glaucoma)  
FELLOWSHIP  
Illinois Eye and Ear Infirmary (Ophthalmic Pathology)  
Clinical Interests  
Medical and surgical management of all forms of glaucoma and cataracts associated with glaucoma; Complex cataract surgery; Ophthalmic pathology  
Research Interests  
Congenital glaucoma; Angle closure glaucoma; Pathophysiology of wound healing in glaucoma; Medical education; Pathophysiology of ocular disease; Ocular oncology

Jacob T. Wilensky, MD  
Jacob T. Wilensky MD Professor in Ophthalmology  
Director, Glaucoma Fellowship Program  
MEDICAL SCHOOL  
Tulane University  
RESIDENCY IN OPHTHALMOLOGY  
Tulane University Affiliated Hospitals  
CLINICAL FELLOWSHIP  
Washington University, St. Louis (Glaucoma)  
RESEARCH FELLOWSHIP  
National Eye Institute (Glaucoma)  
Clinical Interests  
Diagnosis and treatment of glaucoma with special emphasis on laser therapy  
Research Interests  
Investigation of new drugs for glaucoma; Laser therapy treatment for glaucoma

PART-TIME CLINICAL FACULTY

David S. Hillman, MD  
Assistant Professor of Clinical Ophthalmology  
MEDICAL SCHOOL  
Duke University College of Medicine  
RESIDENCY IN OPHTHALMOLOGY  
Illinois Eye and Ear Infirmary  
CLINICAL FELLOWSHIP  
Washington University St. Louis, MO (Glaucoma)
NEURO-OPHTHALMOLOGY

The Neuro-Ophthalmology Service offers expert evaluations and treatment for neuro-opthalmologic conditions, including: optic neuritis, idiopathic intracranial hypertension (pseudotumor cerebri), ischemic optic neuropathies, optic neuropathies of unknown etiology, ocular myasthenia gravis, cranial nerve palsies, thyroid eye disease and visual or oculomotor complications of stroke, brain tumors, multiple sclerosis and other neurological diseases. The service facilitates and interprets a wide range of diagnostic testing relevant to the diagnosis and management of neuro-ophthalmic diseases, including: Goldmann and Humphrey perimetry, infrared pupilometry, optical coherence tomography, electoretinography, lumbar punctures and magnetic resonance imaging. The service works closely with doctors in the University of Illinois Hospital and Health Sciences Systems’ Departments of Neurosurgery, Neurology, Radiation Oncology and Rheumatology to provide interdisciplinary, state-of-the-art treatments.

DIRECTOR

Peter W. MacIntosh, MD
Assistant Professor of Ophthalmology
Director, Neuro-Ophthalmology Service

MEDICAL SCHOOL
The Chicago Medical School

RESIDENCY IN OPHTHALMOLOGY
Stroger Cook County Hospital

CLINICAL FELLOWSHIP
Illinois Eye and Ear Infirmary (Neuro-Ophthalmology)

CLINICAL FELLOWSHIP
Massachusetts Eye and Ear Infirmary (Oculoplastics)

Clinical Interests
Optic neuritis; Papilledema; Myasthenia gravis; Double vision

Research Interests
Thyroid eye disease; Nonarteritic anterior ischemic optic neuropathy (NAION); idiopathic intracranial hypertension and facial paralysis

IMAGE: Stylized brain MRI showing an orbital tumor, courtesy of the Neuro-Ophthalmology Service and Lauren Kalinoski
James Goodwin, MD
Associate Professor of Ophthalmology

MEDICAL SCHOOL
University of Illinois College of Medicine

RESIDENCY IN NEUROLOGY
University of Minnesota

CLINICAL FELLOWSHIP
Bascom Palmer Eye Institute (Neuro-Ophthalmology)

Clinical Interests
Optic neuritis; Optic neuropathies; Ophthalmoplegia; Visual field loss; Idiopathic intracranial hypertension; Cranial nerve palsies

Research Interests
Optic neuritis; Autoimmune optic neuropathy; Optic nerve decompression

Brooke Johnson, DO
Assistant Professor of Ophthalmology

MEDICAL SCHOOL
Michigan State University College of Osteopathic Medicine

RESIDENCY IN NEUROLOGY
Advocate BroMenn Medical Center

CLINICAL FELLOWSHIP
Illinois Eye and Ear Infirmary (Neuro-Ophthalmology)

Clinical Interests
Neuro-Ophthalmology, Headache

Research Interests
Thyroid eye disease; Idiopathic intracranial hypertension; Nonarteritic anterior ischemic optic neuropathy

Anil Gulati, MD
Assistant Professor of Clinical Ophthalmology

MEDICAL SCHOOL
Jawaharlal Institute of Postgraduate Medical Education and Research, India

RESIDENCY IN NEUROLOGY
Illinois Eye and Ear Infirmary

CLINICAL FELLOWSHIP
Illinois Eye and Ear Infirmary (Neuro-Ophthalmology)
The Oculoplastic & Reconstructive Surgery Service provides assessment and treatment for conditions of the eyelids, orbit, face and lacrimal system. Systemic disease, trauma, birth defects and the aging process can alter the area around the eyes. Conditions such as blepharoptosis, ectropion, entropion, eyelid retraction, blepharospasm, epiphora, tumors of the ocular adnexa and orbit and fractures of the orbit are just a few of the conditions treated in this specialty. Patients can be seen at both the Illinois Eye and Ear Infirmary and the Millennium Park Eye Center.

**DIRECTOR**

**Pete Setabutr, MD**
Associate Professor of Ophthalmology
Director, Oculoplastic & Reconstructive Surgery Service
Co-Director, Millennium Park Eye Center

**MEDICAL SCHOOL**
University of Texas-Houston

**RESIDENCY IN OPHTHALMOLOGY**
University of Texas-Houston

**CLINICAL FELLOWSHIP**
Illinois Eye and Ear Infirmary (Oculoplastics)

**Clinical Interests**
Cosmetic and reconstructive eyelid surgery; Orbital surgery; Diseases of the lacrimal system

**Research Interests**
Diseases of the eyelid; Diseases of the orbit; Epidemiological international vision research
Vinay K. Aakalu, MD, MPH
Associate Professor of Ophthalmology
Director, Lacrimal Cell Biology Laboratory
Director, Illinois Center for Thyroid Eye Disease

MEDICAL SCHOOL
Mount Sinai School of Medicine

RESIDENCY IN OPHTHALMOLOGY
Illinois Eye and Ear Infirmary

CLINICAL FELLOWSHIP
Illinois Eye and Ear Infirmary (Oculoplastics)

GRADUATE SCHOOL
Columbia University (MPH)

Clinical Interests
Thyroid eye disease; Orbital tumors; Facial and ocular trauma; Ocular surface disease and scarring; Inflammatory orbital disease; Congenital eyelid and orbital disorders; Eye socket reconstruction; Facial palsies; Eyelid malposition; Lacrimal disease; Aesthetic surgery and treatments

Research Interests
Drug development for ocular surface diseases; Regenerative medicine; Lacrimal cell biology; Dry Eye disease; Cell-based therapies; Orbital imaging; Orbital oncology; Novel and minimally invasive orbital and aesthetic surgery

Peter W. MacIntosh, MD
Assistant Professor of Ophthalmology

MEDICAL SCHOOL
The Chicago Medical School

RESIDENCY IN OPHTHALMOLOGY
Stroger Cook County Hospital

CLINICAL FELLOWSHIP
Illinois Eye and Ear Infirmary (Neuro- Ophthalmology)

CLINICAL FELLOWSHIP
Massachusetts Eye and Ear Infirmary (Oculoplastics)

Clinical Interests
Orbital tumors; Facial paralysis; Eyelid tumors and trauma; Diseases of the lacrimal system

Research Interests
Thyroid eye disease; Nonarteritic anterior ischemic optic neuropathy (NAION); Idiopathic intracranial hypertension and facial paralysis

Allen M. Putterman, MD, FACS
Professor of Ophthalmology

MEDICAL SCHOOL
University of Wisconsin

RESIDENCY IN OPHTHALMOLOGY
Michael Reese Hospital and Medical Center

CLINICAL FELLOWSHIP
Manhattan Eye, Ear and Throat Hospital (Oculoplastics)

Clinical Interests
Aesthetic eyelid and facial plastic surgery; Upper eyelid ptosis surgery; Thyroid eyelid and orbital problems; Eyelid and orbital tumors; Tear duct drainage surgery

Research Interests
Development of procedures and instruments for oculofacial plastic surgery
The Pediatric Ophthalmology & Adult Strabismus Service offers general pediatric eye care, including exams for newborns and children up to 18 years of age. This service also provides other specialty clinics treating rare and unusual children’s eye disorders, including glaucoma and genetic, neurocutaneous, and neuro-ophthalmologic disorders. The doctors in this service specialize in strabismus (eye alignment disorders) in adults as well as children. Additional care providers include certified orthoptists and an oculoplastic and reconstructive surgeon.

DIRECTOR

Nathalie F. Azar, MD
Professor of Clinical Ophthalmology
Director, Pediatric Ophthalmology & Adult Strabismus Service

MEDICAL SCHOOL
Boston University

RESIDENCY IN OPHTHALMOLOGY
George Washington University

CLINICAL FELLOWSHIP
Wilmer Eye Institute (Pediatric Ophthalmology)

Clinical Interests
Adult strabismus; Graves ophthalmopathy; Paralytic and restrictive strabismus; Pediatric strabismus and amblyopia

Research Interests
Eye movement disorders; Surgical treatment techniques for strabismus; Amblyopia
Marilyn T. Miller, MD, MS
Professor of Ophthalmology

MEDICAL SCHOOL
University of Illinois College of Medicine, Chicago

RESIDENCY IN OPHTHALMOLOGY
Illinois Eye and Ear Infirmary

CLINICAL FELLOWSHIP
Illinois Eye and Ear Infirmary and Cook County Hospitals (Strabismus)

GRADUATE SCHOOL
University of Illinois at Chicago (MS, Microbiology)

Clinical Interests
International ophthalmology with special interest in training issues in pediatric ophthalmology; Craniofacial syndromes; Teratology; Duane syndrome

Research Interests
Teratology; craniofacial anomalies; Duane syndrome

M. Cem Mocan, MD
Visiting Associate Professor of Ophthalmology

MEDICAL SCHOOL
Hacettepe University Faculty of Medicine, Turkey

RESIDENCY IN OPHTHALMOLOGY
Hacettepe University Faculty of Medicine, Turkey

CLINICAL FELLOWSHIP
Massachusetts Eye and Ear Infirmary (Pediatric Ophthalmology and Strabismus); Cedars-Sinai Medical Center (Pediatric Ophthalmology and Strabismus)

Clinical Interests
Pediatric glaucoma; Pediatric cataracts; Strabismus

Research Interests
Pediatric glaucoma; Anterior segment dysgenesis; Strabismus

PART-TIME CLINICAL FACULTY

Javaneh Abbasion, MD
Assistant Professor of Ophthalmology
Acting Chief of Ophthalmology at Jesse Brown VA Medical Center

MEDICAL SCHOOL
University of Illinois College of Medicine

RESIDENCY IN OPHTHALMOLOGY
Illinois Eye and Ear Infirmary

CLINICAL FELLOWSHIP
Children’s Hospital of Philadelphia (Pediatric Ophthalmology)

Kimberlee Curnyn, MD
Assistant Professor of Clinical Ophthalmology

MEDICAL SCHOOL
University of Illinois College of Medicine

RESIDENCY IN OPHTHALMOLOGY
Rush University Medical Center

CLINICAL FELLOWSHIP
Illinois Eye and Ear Infirmary (Pediatric Ophthalmology)

Benjamin Mathew, MD
Assistant Professor of Clinical Ophthalmology

MEDICAL SCHOOL
University of Manitoba

RESIDENCY IN OPHTHALMOLOGY
LSU Eye Center, New Orleans
University of Ottawa Eye Institute

CLINICAL FELLOWSHIP
University of Wisconsin - Madison (Pediatric Ophthalmology)

SPECIALTY FACULTY

R.V. Paul Chan, MD, MSc, MBA, FACS
Professor in Ophthalmology
Pediatric Retina

Felix Y. Chau, MD
Associate Professor of Ophthalmology
Pediatric Retina

Lawrence Kaufman, MD, PhD
Associate Professor of Clinical Ophthalmology
Pediatric Neuro-Oph

Peter Macintosh, MD
Assistant Professor of Ophthalmology
Neuro-Ophthalmology & Oculoplastics
The Retina Service specializes in treating patients with both medical and surgical retinal vascular and vitreoretinal disorders, such as: age-related macular degeneration, vein occlusion, sickle cell eye disease, ocular complications of diabetes, retinal detachment, vitreomacular adhesion, retinopathy of prematurity, retinitis pigmentosa, intraocular tumors and severe eye trauma. The doctors in this service are skilled specialists in laser and other medical treatment of the retina, vitreoretinal surgery and complex retinal detachment repair.

**DIRECTOR**

Jennifer I. Lim, MD, FARVO  
Marion H. Schenk Esq. Chair in Ophthalmology for Research of the Aging Eye  
Professor of Ophthalmology  
Director, Retina Service  

**MEDICAL SCHOOL**  
Northwestern University  

**RESIDENCY IN OPHTHALMOLOGY**  
Illinois Eye and Ear Infirmary  

**CLINICAL FELLOWSHIP**  
Wilmer Eye Institute (Retina)  

**Clinical Interests**  
Diabetic retinopathy; Age-related macular degeneration; Retinal vascular diseases; Macular diseases; Retinal detachments and vitreoretinal disorders; Ocular tumors; Retinal degenerations  

**Research Interests**  
Medical and surgical treatments; Clinical trials to evaluate new medical and surgical treatments of retinal diseases; Retinal imaging as applied to management of retinal diseases and determination of pathophysiology; Collaborative projects with basic scientists on pathogenesis of retinal diseases

*Image: Ultra-widefield, Optos retinal image courtesy of the Retinal Chemical Genomics Laboratory*
Norman P. Blair, MD, FARVO
Professor of Ophthalmology

MEDICAL SCHOOL
Indiana University

RESIDENCY IN OPHTHALMOLOGY
Massachusetts Eye & Ear Infirmary

CLINICAL FELLOWSHIP
Retina Associates/Massachusetts Eye & Ear Infirmary (Retina)

RESEARCH FELLOWSHIP
Schepens Eye Research Institute

Research Interests
Retinal oxygenation; Retinal energy metabolism; Retinal blood flow and ischemia; Diabetic retinopathy

R. V. Paul Chan, MD, MSc, MBA, FACS
John H. Panton, MD Professor in Ophthalmology
Interim Chair, Department of Ophthalmology and Visual Sciences
Director, Pediatric Retina and ROP Service
Co-Director, Vitreoretinal Fellowship Program

MEDICAL SCHOOL
Temple University

RESIDENCY IN OPHTHALMOLOGY
New York-Presbyterian Hospital, Cornell University

CLINICAL FELLOWSHIP
Massachusetts Eye and Ear Infirmary (Retina)

Clinical Interests
Adult and pediatric retinal disease including retinopathy of prematurity (ROP); Retinal vascular diseases; Eye trauma; Eye infections/endophthalmitis; Diabetic retinopathy; Age-related macular degeneration

Research Interests
Global ophthalmology; Telemedicine and tele-education; New methods of diagnosing and managing pediatric retinal disease

Felix Y. Chau, MD
Associate Professor of Ophthalmology

MEDICAL SCHOOL
University of Iowa

RESIDENCY IN OPHTHALMOLOGY
Duke University Eye Center

CLINICAL FELLOWSHIP
Illinois Eye and Ear Infirmary (Retina)

Clinical Interests
Pediatric and adult retinal diseases; Retinopathy of prematurity (ROP); Retinoblastoma; Rare congenital and inherited retinal diseases; Proliferative vitreoretinopathy (PVR); Diabetic retinopathy; Macular degeneration; Cystoid macular edema; Retinal detachment

Research Interests
Medical and surgical treatments; Experimental models and risk factors for retinal diseases; Engineering applications in ophthalmology

Yannek I. Leiderman, MD, PhD
Associate Professor of Ophthalmology
Director, Vitreoretinal Microsurgery Laboratory

MEDICAL SCHOOL
George Washington University
National Institutes of Health Partnership (PhD, Molecular Pathobiology)

RESIDENCY IN OPHTHALMOLOGY
Massachusetts Eye and Ear Infirmary (Vitreoretinal Surgery)

Clinical Interests
Vitreoretinal surgical diseases; Diabetic eye disease; Complex retinal detachment; Proliferative vitreoretinopathy (PVR); Macular surgery; Treatment of aphakia and placement of secondary intraocular lenses

Research Interests
Effectiveness of ophthalmic surgical interventions in diseases of the retina and vitreous; High-fidelity modeling of novel surgical devices and experimental techniques in microsurgery

William F. Mieler, MD, FARVO
Cless Family Professor in Ophthalmology
Vice Chair for Education
Director, Ocular Oncology Clinic
Co-Director, Vitreoretinal Fellowship Program

MEDICAL SCHOOL
University of Wisconsin-Madison

RESIDENCY IN OPHTHALMOLOGY
Bascom Palmer Eye Institute

CLINICAL FELLOWSHIP
The Eye Institute, Medical College of Wisconsin (Retina-Vitreous)

CLINICAL FELLOWSHIP
Wills Eye Hospital (Ocular Oncology)

Clinical Interests
Diseases of the macula, retina and vitreous; Age-related macular degeneration; Diabetic macular edema; Venous occlusive diseases; Vitreoretinal interface disorders; Ocular oncology

Research Interests
Ocular pharmacology; Intraocular tumors; Ocular imaging

Lawrence J. Ulanisky, MD
Assistant Professor of Clinical Ophthalmology
Chief of Ophthalmology and Vitreoretinal Surgeon at Captain James Lovell Federal Health Care Center

MEDICAL SCHOOL
University of Michigan

RESIDENCY IN OPHTHALMOLOGY
William Beaumont Eye Institute

CLINICAL FELLOWSHIPS
University of Toronto, (Vitreo-Retina and Ocular Oncology)
Illinois Eye and Ear Infirmary (Uveitis)

Clinical Interests
Age-related macular degeneration; Uveitis; Ocular oncology and intraocular tumors; Surgical management of diabetic retinopathy, retinal detachment, proliferative vitreoretinopathy, and proliferative diabetic retinopathy; Surgical management of secondary intraocular lenses; Complex cataract surgery

Research Interests
Clinical trials in medical management of non-exudative & exudative macular degeneration; Novel treatments & clinical trials for diabetic retinopathy; Diabetic macular edema; Microvascular injury
UVEITIS

Uveitis causes up to 20 percent of blindness in the United States. The Uveitis Service treats patients with inflammation of the uveal tract: the middle vascular layers of the eye critical to its normal function. Because of the rich circulation of blood throughout this area and its proximity to other important parts of the eye, the uvea is susceptible to immune disorders. Patients are referred to this service for the diagnosis and management of infectious and non-infectious ocular inflammatory conditions such as scleritis and anterior, intermediate, posterior and panuveitis. Treatment with steroid-sparing systemic immunomodulatory therapy is offered when appropriate. The service also performs procedures for its uveitis patients such as the insertion of steroid eluting implants as well as surgical management of complex uveitic cataracts. The service participates in clinical trials for novel therapeutics in uveitis and has established a uveitis research registry to conduct further clinical research studies in uveitis.

CO-DIRECTOR
Pooja Bhat, MD
Assistant Professor of Ophthalmology
Co-Director, Uveitis Service
Director, Medical Student Education

MEDICAL SCHOOL
Lokmanya Tilak Municipal Medical College and Hospital, India

RESIDENCY IN OPHTHALMOLOGY
Northwestern University

CLINICAL FELLOWSHIPS
Northwestern University (Uveitis)
Massachusetts Eye and Ear Infirmary (Ophthalmic Pathology)

RESEARCH FELLOWSHIP
Massachusetts Eye Research and Surgery Institution (Uveitis)

Clinical Interests
Scleritis; Anterior, intermediate and posterior uveitis; Infectious retinopathies; White dot syndromes

Research Interests
Systemic and local immunosuppression for ocular inflammatory conditions; Herpetic eye disease; Anti-retinal antibodies in autoimmune retinopathy; Imaging modalities in anterior and posterior uveitis

CO-DIRECTOR
Ann-Marie Lobo, MD
Assistant Professor of Ophthalmology
Co-Director, Uveitis Service

MEDICAL SCHOOL
Louisiana State University New Orleans

RESIDENCY IN OPHTHALMOLOGY
Massachusetts Eye and Ear Infirmary

CLINICAL FELLOWSHIP
Massachusetts Eye and Ear Infirmary (Ocular Immunology/Uveitis)

Clinical Interests
Ocular inflammatory disease, including infectious and non-infectious uveitis, scleritis and ocular surface inflammation; Cataract surgery

Research Interests
Novel biomarkers in herpetic eye disease; Diagnostic testing in infectious and non-infectious uveitis; Outcomes of biologic response modifier therapies in the treatment of uveitis; Systemic infections and eye disease

IMAGE: OCT image showing Macular Serpiginous Choroidopathy courtesy of the Uveitis Service
LOW VISION

This specialized service introduces patients with low vision to technology and techniques to enhance their remaining sight and facilitate their independence. A low-vision optometrist and a certified low-vision therapist work as a team to provide clinical examination and visual skills assessment. Therapies include special optical and electronic devices, ergonomic equipment and new visual skills training to address routine daily tasks such as reading, writing, managing medication, cooking, locating and sign reading.

DIRECTOR

Joan A. Stelmack, OD, MPH
Associate Professor of Clinical Ophthalmology
Director, Low Vision Service

OPTOMETRY SCHOOL
Illinois College of Optometry

GRADUATE SCHOOL
Johns Hopkins University (MPH)

Clinical Interests
Rehabilitation of patients with vision loss

Research Interests
Creating multicenter clinical trials and observational studies to evaluate rehabilitation strategies and devices to restore or enhance vision

PATHOLOGY

The Ophthalmic Pathology Laboratory is a joint program of the Departments of Pathology and Ophthalmology that provides diagnostic services to patients and physicians within and outside Illinois. The laboratory is integrated with the other clinical laboratories in the University of Illinois Hospital and Health Sciences System, making it possible to utilize the latest cutting-edge diagnostic techniques in immunopathology and molecular pathology available in the diagnosis of ocular disorders.

DIRECTOR

Amy Y. Lin, MD
Associate Professor of Ophthalmology and Pathology
Assistant Dean for Curriculum
Director, Ophthalmic Pathology Laboratory

MEDICAL SCHOOL
Johns Hopkins University

RESIDENCY
Illinois Eye and Ear Infirmary (in Ophthalmology)
University of Illinois College of Medicine (in Pathology)

CLINICAL FELLOWSHIP
Illinois Eye and Ear Infirmary (Ophthalmic Pathology)

CLINICAL INTERESTS
Eye pathology; Pathologic basis of ophthalmic disease

RESEARCH INTERESTS
Ocular oncology; Pathology education; Virtual microscopy for learning pathology; Team-based learning
The Comprehensive Eye Clinic is a premiere ophthalmology practice run by recognized Board Certified ophthalmologists. The clinic provides: comprehensive eye exams, eyeglass prescriptions and contact lens fitting. The more extensive services include: state-of-the-art cataract surgery, femtosecond laser assisted cataract surgery, premium intraocular lenses and the management of common and complex eye diseases. Same-day or next-day appointments are available.

The General Eye Clinic is the heart of our Department and serves as the first point of contact for many of the Infirmary’s neediest patients, as well as a primary location for ophthalmic graduate medical education. Our dedicated residents and world-class faculty provide a wide spectrum of collaborative ophthalmic care ranging from managing common eye diseases and delivering routine eye exams to performing complex medical and surgical cases including cataract, glaucoma and retinal procedures. Special emphasis is placed on providing strong continuity of patient care. The GEC sees emergent referrals from outside providers from throughout the region and accepts “walk-in” patients with acute eye disease.

**DIRECTOR**

M. Soledad Cortina, MD  
(Cornea)  
Associate Professor of Ophthalmology  
Director, COFP and GEC  
Director, Artificial Cornea Program

**COFP FACULTY**

Jose de la Cruz, MD  
(Cornea)

Sandeep Jain, MD  
(Cornea)

Timothy McMahon, OD, FAAO  
(Contact Lens)

Angelica Scanzera, OD, FAAO  
(Contact Lens)

Ellen Shorter, OD, FAAO  
(Contact Lens)

**GEC FACULTY**

Anthony G. Finder, MD  
Clinical Assistant Professor of Ophthalmology  
MEDICAL SCHOOL  
Northwestern University  
RESIDENCY IN OPHTHALMOLOGY  
Michael Reese Hospital and Medical Center  
Clinical Interests  
General Ophthalmology; Early diagnosis and medical management of glaucoma; Analysis of problems related to ophthalmic optics and refraction; Resident education

Ann-Marie Lobo, MD  
(Uveitis)

Peter Macintosh, MD  
(Neuro-Oph and Oculoplastics)

Mark Rosenblatt, MD, PhD, MBA  
(Cornea)

Joel Sugar, MD  
(Cornea)

Elmer Tu, MD  
(Cornea)
MILLENIUM PARK EYE CENTER (MPEC)

The Millennium Park Eye Center (MPEC), conveniently located in the heart of downtown Chicago, is the city-center clinic of the Illinois Eye and Ear Infirmary. Ophthalmologists and Optometrists seeing patients at the MPEC are all members of the Department of Ophthalmology and Visual Sciences faculty. They diagnose and treat a wide range of eye conditions, from common eye problems to the most complex and rare ophthalmic issues. The Center offers the most advanced technology in vision and eye care available, utilizing state-of-the-art diagnostic imaging and surgical instrumentation.

CO-DIRECTOR
Jose de la Cruz, MD
(Cornea)

CO-DIRECTOR
Pete Setabutr, MD
(Oculoplastic & Reconstructive Surgery)

Ahmad Aref, MD
(Glaucoma)

Dimitri Azar, MD, MBA
(Cornea)

Nathalie Azar, MD
(Pediatric Ophthalmology & Adult Strabismus)

R. V. Paul Chan, MD, MSc, MBA, FACS
(Retina)

Ann-Marie Lobo, MD
(Uveitis)

Timothy McMahon, OD, FAAO
(Contact Lenses)

William Mieler, MD, FARVO
(Retina)

Allen M. Puttman, MD, FACS
(Oculoplastics)

Mark Rosenblatt, MD, PhD, MBA
(Cornea)

Angelica Scanzera, OD, FAAO
(Contact Lens)
RESEARCH FACULTY

The Department of Ophthalmology and Visual Sciences has a history of dedicated commitment and record of prominent contributions to vision science research. The overarching goal for the research program is to address the significant challenges central to understanding, treating and preventing blinding eye disease. The program encompasses exemplary and pioneering research in the most critical areas of vision research, including investigations to understand the mechanisms of potentially blinding eye diseases, the development of innovative techniques and instruments for diagnosing and monitoring the progression of eye diseases, genome-wide association studies, visual psychophysics, retinal processing, and visual neurophysiology. The Department maintains a tradition of excellence in collaborative and interdisciplinary research that has advanced knowledge in basic vision science and facilitated translation of findings to improve clinical care of patients with eye diseases.

VICE CHAIR FOR RESEARCH

Deepak Shukla, PhD
Vice Chair for Research
Marion H. Schenk Esq. Professor in Ophthalmology for Research of the Aging Eye
Professor of Ophthalmology, Microbiology and Immunology
Director, Ocular Virology Laboratory

GRADUATE SCHOOL
University of Illinois at Chicago (PhD, Microbiology and Immunology)

RESEARCH FELLOWSHIP
Northwestern University (Virology and Immunology)

Research Interests
Ocular herpes virus infection mechanisms; Development of new therapeutic strategies against viral diseases of the aging eye; Herpes virus vaccine development
Dingcai Cao, PhD  
Associate Professor of Ophthalmology  
Director, Visual Perception Laboratory  

**GRADUATE SCHOOL**  
Beijing University (MS, Biopsychology)  
University of Chicago (MS, Statistics)  
University of Chicago (PhD, Biopsychology)  

**Research Interests**  
Melanopsin-based visual perception and circadian rhythm; Rod-cone interaction; Color perception; Retinal physiology; Lighting and health; Acute and chronic alcohol effect on vision and circadian rhythm  

Jin-Hong [Robert] Chang, PhD  
Research Associate Professor of Ophthalmology  
Director, Angiogenesis Research Laboratory  

**GRADUATE SCHOOL**  
University of Mississippi (PhD, Biochemistry)  

**RESEARCH FELLOWSHIP**  
University of Virginia (Microbiology)  
Schepens Eye Research Institute, Harvard Medical School (Ophthalmology)  

**Research Interests**  
The role of VEGFR1, R2 and R3 activity in vitro and in vivo with the broader goal of characterizing the intrinsic factors of lymphatic cells that regulate corneal angiogenesis and lymphangiogenesis; Development of targeted therapies for corneal injury and disease  

Michael A. Grassi, MD  
Associate Professor of Ophthalmology  
Director, Retinal Chemical Genomics Laboratory  

**MEDICAL SCHOOL**  
Northwestern University  

**RESIDENCY IN OPHTHALMOLOGY**  
University of Iowa  

**CLINICAL FELLOWSHIP**  
University of Iowa (Medical Retina)  

**RESEARCH FELLOWSHIP**  
University of Iowa (Molecular Ophthalmology)  

**Research Interests**  
Improving the treatment of retinal disease; Using cell-based models of retinal disease in genomic and chemical high throughput studies to identify key pathways and novel therapeutic targets  

Victor H. Guaiquil, PhD  
Assistant Research Professor of Ophthalmology  
Corneal Regenerative Medicine Laboratory  

**GRADUATE SCHOOL**  
University Austral, Chile (MS)  
SUNY Downstate Medical Center, New York (PhD, Molecular and Cellular Biology)  

**RESEARCH FELLOWSHIPS**  
Memorial Sloan-Kettering Cancer Center and Hospital for Special Surgery, New York  

**Research Interests**  
Cellular and molecular mechanisms involved in angiogenesis and neurogenesis in the retina and cornea; Cornea nerve regeneration; Oxygen induced retinopathy; Axonal guidance proteins  

Joelle A. Hallak, MS, PhD  
Assistant Professor of Ophthalmology  
Executive Director, Ophthalmic Clinical Trial and Translational Center  
Director, Ophthalmic Data Science Laboratory  

**GRADUATE SCHOOL**  
University of Illinois at Chicago (MS, PhD, Epidemiology)  

**Research Interests**  
Comparative effectiveness research; Statistical analysis of complex data; Computational models combining structured and unstructured data in order to develop personalized disease prediction scores  

Kyu Yeon Han, PhD  
Research Assistant Professor of Ophthalmology  
Metalloproteinases Research Laboratory  

**GRADUATE SCHOOL**  
Suwon University, Korea (MS, Genetic Engineering)  
Kyung Hee University, Korea (PhD, Oncology)  

**RESEARCH FELLOWSHIP**  
University of Illinois College of Medicine (Ophthalmology)  

**Research Interests**  
The mechanisms of membrane type I metalloproteinase in corneal neovascularization; Molecular and cellular aspects of extracellular vesicles in corneal angiogenesis and wound healing  

RESEARCH FACULTY continued on next page
RESEARCH FACULTY (CONTINUED)

Andrius Kazlauskas, PhD
Professor of Ophthalmology and Physiology and Biophysics

GRADUATE SCHOOL
Cleveland State University (PhD, Chemistry)
Fred Hutchinson Cancer Research Center, Seattle, WA (Postdoctoral Research Associate, Cancer Biology)

Research Interests
Determinant of angiogenic homeostasis; Biomarkers of anti-VEGF’s therapeutic efficacy; Development of a PDR (proliferative diabetic retinopathy) vaccine

Nalin M. Kumar, DPhil
Professor of Ophthalmology

GRADUATE SCHOOL
University of Oxford, UK (DPhil Biochemistry)

RESEARCH FELLOWSHIP
Baylor College of Medicine (Cell and Molecular Biology)

Research Interests
Intercellular channels (gap junctions containing connexins) and their involvement in the processes and mechanisms that are necessary for vision

J. Jason McAnany, PhD
Associate Professor of Ophthalmology
Director, Clinical Psychophysics and Electrophysiology Laboratory

GRADUATE SCHOOL
University of Illinois at Chicago (MA, PhD, Behavioral Neuroscience)

RESEARCH FELLOWSHIP
University of Illinois College of Medicine (Psychophysics and Electrophysiology)

Research Interests
Electroretinography; Psychophysics; Pupillometry; Retinal imaging; Acquired and inherited retinal disease

Joy Sarkar, PhD
Research Assistant Professor of Ophthalmology
Corneal Neurobiology and Regenerative Medicine Laboratory
Associate Director, Cell and Molecular Biology Core Module

GRADUATE SCHOOL
University of Mumbai (MS, Microbiology)
H.N. Reliance Foundation Hospital Research Center (PhD, Biochemistry)

RESEARCH FELLOWSHIPS
Northwestern University (Cellular and Molecular Biology)
Tata Institute of Fundamental Research TIFR (Cellular and Molecular Biology)

Research Interests
Cellular & molecular aspects of Dry Eye disease; Corneal nerve regeneration after injury; Angiogenesis, neurogenesis & regenerative medicine; Innate immune regulatory mechanisms in eye disease

Xincheng Yao, PhD
Professor of Bioengineering and Ophthalmology
Director, Biomedical Optics and Functional Imaging Laboratory

GRADUATE SCHOOL
Harbin Institute of Technology (MEng, Optical Instrumentation)
Institute of Physics, Chinese Academy of Sciences (PhD, Optics)

RESEARCH FELLOWSHIP
Los Alamos National Laboratory (Biomedical Optics)

Research Interests
Biomedical optics instrumentation; Ultra-wide field fundus photography; Functional optical coherence tomography (OCT); OCT angiography; Super-resolution ophthalmoscopy; Machine learning based image classification
Diabetic eye disease, which is the leading cause of blindness among working-age adults, can have devastating effects on vision. Although the effects of diabetes on the retinal blood vessels have been studied extensively, relatively little is known about the effects on retinal neurons. Dr. Jason McAnany’s Clinical Electrophysiology and Psychophysics laboratory has been working to develop new methods to understand the relationship between diabetes and neurodegeneration in the eye and brain.

Using novel approaches, Dr. McAnany’s lab has been able to non-invasively record electrical signals that are generated by different retinal cell types in patients who have diabetes. In a series of recent publications, Dr. McAnany and his team have reported widespread effects of diabetes on many retinal cell types. Importantly, they have shown that the photoreceptor cells, which sense light and are responsible for the very first steps of vision, can be affected before the disease is apparent by clinical eye examination. Dr. McAnany’s work is critical for developing a complete understanding of how diabetes affects the eye, and will lay the foundation for new tests that can be used in clinical trials designed to treat early-stage diabetic retinopathy.
OPHTHALMIC RESEARCH IN BIOENGINEERING, INNOVATION, AND TECHNOLOGY

ORBITlab (Ophthalmic Research in Bioengineering, Innovation, and Technology) is an interdisciplinary cohort of faculty and students specializing in the research and development of ophthalmic devices. The brainchild of Mark Rosenblatt, MD, PhD, MBA, ORBITlab was started in early 2018, with the goal of increasing ophthalmic patent and device output for the University of Illinois at Chicago.

ORBITlab’s unique model brings together experts from across UIC to facilitate the creation of new intellectual property for the university. Its core members include faculty, staff, and students from the Departments of Bioengineering, Design, and Ophthalmology and Visual Sciences, the College of Business Administration, and the Office of Technology Management (OTM). ORBITlab is housed in the UIC Innovation Center, and funded by the Department of Ophthalmology and Visual Sciences and the Office of the Provost.

The team has ambitious goals and timelines for creating novel devices. ORBITlab plans to take on a new project every year, using submissions from the Department of Ophthalmology’s researchers and clinicians. ORBITlab will generate a functional prototype, a comprehensive market analysis, an experimental protocol, and will assist with writing Internal Review Board (IRB) applications. These deliverables are provided to the project solicitor for initial data collection and validation, which will ultimately be used by OTM to file an invention disclosure. ORBITlab is currently testing a prototype of their inaugural project.
The Ophthalmic Clinical Trials and Translational Center (OCTTC) under the direction of Joelle Hallak, PhD, Assistant Professor of Ophthalmology, offers a new model for dedicated clinical trial support services which provides personalized clinical trial patient care, cutting-edge equipment and ophthalmic lanes, and a platform for clinicians to launch new trials and studies. The main objective of the OCTTC is to streamline research operations that will enhance the implementation of clinical trials in order to provide patients diagnosed with the most difficult and complex ophthalmic diseases an opportunity for promising new treatments.

One clinical trial coordinator (CTC) is assigned to each trial or study. The CTC is responsible for running the day-to-day research services which include: (i) budget and contract negotiations; (ii) Institutional Review Board (IRB) preparation and submission; (iii) coverage analysis; (iv) patient recruitment strategies, examinations and data collection; (v) intellectual property and commercialization consulting, and (vi) regulatory and oversight support to first in human studies. Prior to each patient visit, the CTC works with clinical staff and investigators to schedule necessary clinical procedures. During the study visit, the CTC accompanies the patient throughout his or her time in the clinic while ensuring study protocol requirements are met. This enhanced standard of care allows for a higher quality patient experience and increases the attention to detail and compliance, which are critical to study results.

From the onset of a clinical trial to the close out and data analysis, the OCTTC provides investigators with professional level support. This is especially critical for investigator-initiated studies. New treatments and medical devices are developed in the laboratory and clinics before obtaining sponsorship. The OCTTC provides the framework and personnel to support these initial investigations.

With its high level of dedicated services, the OCTTC provides an environment for innovation, encouraging clinical and translational scientists in their quest to provide the very best treatment options available for patients suffering from the most serious eye diseases.
## Federally Sponsored Grants

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<td>Histatin Peptides as a Treatment for Ocular Surface Injury and Prevention of Corneal Neo-Vascularization</td>
<td>US Department of Defense</td>
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<tr>
<td>Vinay Aakalu, MD, MPH</td>
<td>Study of Accessory Lacrimal Gland and Precursor Cell Biology</td>
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<td>Javaneh Abbassian, MD</td>
<td>Postnatal Growth and Retinopathy of Prematurity (G-ROP) Studies</td>
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<td>Alexander Ageidis (Shukla)</td>
<td>Heparanase in Herpetic Keratitis</td>
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<td>Dimitri Azar, MD, MBA</td>
<td>Metalloproteinase Expression in Corneal Wounds</td>
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<td>Dingcai Cao, PhD</td>
<td>Alcohol Stimulation and Sedation in Binge Drinkers</td>
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<td>Dingcai Cao, PhD</td>
<td>The Effect of Alcohol on Retinal Photic Signaling to the Human Circadian System</td>
<td>National Institute of Alcohol Abuse and Alcoholism</td>
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<td>Dingcai Cao, PhD</td>
<td>Women’s Response to E-Cigarette Cues</td>
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<tr>
<td>R. V. Paul Chan, MD, MSc, MBA, FACS</td>
<td>Clinical and Genetic Analysis of Retinopathy of Prematurity</td>
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<td>Jin-Hong Robert Chang, PhD</td>
<td>VEGFR2 Modulates Corneal Angiogenesis And Lymphangiogenesis</td>
<td>National Eye Institute</td>
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<td>Jin-Hong Robert Chang, PhD</td>
<td>VA IPA for Shuangyong Wang</td>
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<td>Jin-Hong Robert Chang, PhD</td>
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<td>VA IPA for Pei-Yu Wu</td>
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<td>Jin-Hong Robert Chang, PhD</td>
<td>VA IPA for Kuyueon Han</td>
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<td>Ali Djalilian, MD</td>
<td>Mechanisms of Corneal Epithelial Disease and Repair</td>
<td>National Eye Institute</td>
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<td>Ali Djalilian, MD</td>
<td>Clinical Translational of Mesenchymal Stem Cell Therapy for Corneal and Ocular Surface Injuries</td>
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<td>Mexican American Glaucoma Genetic Study (MAGGS)</td>
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<td>Xiaoyi Raymond Gao, PhD</td>
<td>Discovery Approach to Ocular Hypertension</td>
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<td>Michael Grassi, MD</td>
<td>Role of Leukocyte-Endothelial Adhesion in Diabetic Retinopathy</td>
<td>National Eye Institute</td>
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<td>Michael Grassi, MD</td>
<td>Diabetic Complications Consortium (DiaComp) Pilot and Feasibility Study: Regulators that Mediate the Cellular Response to Chronic Hyperglycemia</td>
<td>National Institute of Diabetes and Digestive and Kidney Diseases</td>
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<td>Sandeep Jain, MD</td>
<td>Chronic GVHD: Intersecting Aspects in Systemic and Ocular Disease</td>
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<td>Sandeep Jain, MD</td>
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<td>Sandeep Jain, MD</td>
<td>Molecular And Cellular Aspects Of Corneal Nerve Regeneration</td>
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<td>Sandeep Jain, MD</td>
<td>Innate Immune Aspects of Ocular Surface Disease</td>
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<td>Charlotte Joslin, OD, PhD</td>
<td>Risk Factor Analysis of Perioperative Visual Loss</td>
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<td>Charlotte Joslin, OD, PhD</td>
<td>MD-PBHS Exploring Factors Related to Racial Disparities in Ovarian Cancer Incidence and Survival: the OCWAA Consortium</td>
<td>National Institutes of Health *</td>
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<tr>
<td>J. Jason McAnany, PhD</td>
<td>Mechanisms of Early Functional Loss in Diabetic Eye Disease</td>
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<tr>
<td>J. Jason McAnany, PhD</td>
<td>Mechanisms Limiting Visual Performance in Retinal Degenerations</td>
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<td>Heather Moss, MD, PhD</td>
<td>Physiologically Based Markers of Idiopathic Intracranial Hypertension</td>
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<td>David Pepperberg, PhD</td>
<td>Cell-targeted Gold Nanoparticles for Photo-excitation for Retinal Ganglion Cells</td>
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<td>David Pepperberg, PhD</td>
<td>Nanoparticle Based Photo Activator of Voltage Gated Sodium Channels</td>
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<td>Mark Rosenblatt, MD, PhD, MBA</td>
<td>UIC K12 Independent Clinical Vision Scientist Development Program</td>
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<tr>
<td>Mark Rosenblatt, MD, PhD, MBA</td>
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<td>National Eye Institute</td>
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<tr>
<td>Mark Rosenblatt, MD, PhD, MBA</td>
<td>Molecular and Functional Characterization of the Regenerative Potential of Slow Cycling Corneal Epithelial Cells</td>
<td>National Eye Institute</td>
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<tr>
<td>Mark Rosenblatt, MD, PhD, MBA</td>
<td>Mechanisms of Corneal Nerve Repair</td>
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<tr>
<td>Mark Rosenblatt, MD, PhD, MBA</td>
<td>Tissue Engineering Cornea Replacements</td>
<td>National Eye Institute *</td>
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* Subcontracts
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<td>Mahnaz Shahidi, PhD</td>
<td>Noninvasive Imaging of Chorioretinal Oxygen Tension</td>
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<td>Mahnaz Shahidi, PhD</td>
<td>Ocular Biomarkers of Microvascular, Neural and Metabolic Function In Diabetes</td>
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<td>Deepak Shukla, PhD</td>
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INVESTITURE OF R.V. PAUL CHAN, MD, MSC, MBA, FACS

FIRST RECIPIENT OF THE PANTON PROFESSORSHIP IN OPHTHALMOLOGY

Endowed chairs and professorships allow the tradition of academic excellence and the breakthroughs of mission-driven research at the University of Illinois College of Medicine to continue, while creating a unique opportunity to honor an individual’s legacy. Thanks to the generous support of John and Mary Panton and the Panton Family, the John H. Panton MD Professorship in Ophthalmology was endowed to R.V. Paul Chan, MD, MSc, MBA, FACS in December 2017 at the Riverside Golf Club in Riverside, IL. Peter Panton, MD (Residency ’86), and Robert Panton, MD (Residency ’90), followed in the footsteps of their father John H. Panton, MD and are graduates of the residency program at the Illinois Eye and Ear Infirmary. Peter and Robert, along with the rest of the Panton family, were instrumental in funding the John H. Panton MD Professorship in memory of their late father. “We are grateful to be able to honor our father in this way, give back to the University and program that gave us so much and to have a profound multiplier effect on patient care,” said Dr. Peter Panton.

Dr. Chan is a Professor of Ophthalmology at the Illinois Eye and Ear Infirmary, University of Illinois at Chicago, and the Interim Chair of the Department of Ophthalmology and Visual Sciences. He is an international authority on pediatric retinal disease. Dr. Chan is the Co-Director of the Vitreoretinal Fellowship Program and serves as Director of the Pediatric Retina and Retinopathy of Prematurity Service. He was the first Vice Chair for Global Ophthalmology at UIC.


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IN MEMORIAM

MARK W. LUNDE, MD
Assistant Professor of Clinical Ophthalmology
1944 - 2016

Mark W. Lunde was a valued member of the University of Illinois Eye and Ear Infirmary Glaucoma Service and Resident Training Program. Dr. Lunde received his undergraduate training at the University of Illinois in Urbana-Champaign and his medical degree from the University of Illinois College of Medicine in Chicago. Dr. Lunde proudly served his country for two years as a Captain in the U.S. Air Force Medical Corps and returned home to complete his residency, cornea preceptorship and glaucoma fellowship at Rush Presbyterian St. Luke’s Medical Center in Chicago.

Dr. Lunde was a member of the Chicago medical community for the entirety of his medical career, serving the Chicagoland community as one of the first fellowship trained glaucoma specialists. After almost 30 years in private practice, Dr. Lunde joined the public sector and became the Chief of Ophthalmology at the Jesse Brown VA Medical Center where he trained IDEI residents. Dr. Lunde was a highly talented physician and educator. He was generous with the time he spent healing patients and teaching residents.

Thanks to the financial support of friends, former residents and patients of Dr. Lunde, the Department has established the Dr. Mark W. Lunde Memorial Lectureship. This important lecture will honor Dr. Lunde's legacy and contributions to the Department of Ophthalmology and Visual Sciences around glaucoma research and clinical care. The inaugural lecture took place during the Alumni Resident Day on June 21, 2019.

Dr. Lunde is survived by his wife of 18 years, Mary Lou Abney Lunde, his daughter, Dr. Elisa (Ryan) Smith, his son Patrick (Kayla) Lunde, and four grandchildren.
DAVID R. PEPPERBERG, PHD, FARVO
Searls-Schenk Professor in Ophthalmology
1944 - 2018

In September 2018, the Department of Ophthalmology and the greater vision science community felt a significant loss. The news of David Pepperberg’s death affected many on both a personal and professional level.

For over 35 years, Dr. Pepperberg was one of the Department’s most outstanding faculty members. His influential work on the molecular and cellular mechanisms of light and dark adaptation in photoreceptors, shaped the field and helped bring him and the UIC Department of Ophthalmology and Visual Sciences to great prominence in vision science research.

Archived in nearly 100 elegantly written journal articles, David Pepperberg’s work advanced our understanding of how the eye turns light into neural signals, how diseases affect vision, and how the loss of vision due to eye disease might be restored. He endeavored to develop light-sensitive molecular structures that could function in place of damaged photoreceptors. His impeccable approach to science lives on in the many students and collaborators with whom he worked so passionately.

John E. Dowling, PhD, Professor Emeritus at Harvard University remembers David Pepperberg as a postdoctoral fellow. “In my lab he carried out one of the most beautiful experiments in the field of vision in my view: Isolating a skate (all-rod) retina, he partially bleached away its rhodopsin, reducing the sensitivity of the photoreceptors. He then applied exogenously all-trans and 11-cis retinal to the retina in sequence. The all-trans retinal had no effect, but the 11-cis retinal increased the photoreceptor sensitivity by more than two log units in concert with the regeneration of rhodopsin. This experiment has been repeated countless times since then. For his entire career, David carried out such imaginative experiments; he will be sorely missed!”

For Jason McAnany, PhD, Associate Professor of Ophthalmology at UIC, David Pepperberg’s creativity and passion for research served as a model. “It was my great privilege to know David for over a decade as a mentor and colleague, and to experience first-hand his meticulous approach to addressing complex scientific questions. I will also remember David as a kind and generous person.”

Deepak Shukla, PhD, Professor of Ophthalmology at UIC remembers David as a very thoughtful colleague with whom he could have inspiring conversations about science or fiction in equal measure. “David was very strong mentally, and remained committed to science up until his last couple of weeks.”

Mark Rosenblatt, MD, PhD, MBA, Professor and Dean of the University of Illinois College of Medicine, worked with David Pepperberg for several years at the IEEI. “Those who had the pleasure of working with David knew that he was the consummate scientist, with a hunger for knowledge and a commitment to scientific rigor, honesty, and greatness that is unparalleled. We also knew David as a human being of the highest quality.”

David Pepperberg is survived by his wife, Audrey Eisenmann, and sister, Ellen Pepperberg Millman. His contribution to both the science and the art of vision research is his legacy.

“With his careful and seminal work, and his passion for how photoreceptors provide us with vision, David influenced many of us, including me.”

Paul Sieving, MD, PhD
Director, National Eye Institute, NIH
symposia & events 2019-2020

Friday, June 21, 2019
43rd Annual Alumni Resident Day

Sunday, July 7 – Wednesday, July 10, 2019
31st Annual Midwest Ocular Angiography Conference (MOAC)

Friday, August 23 – Sunday, August 25, 2019
19th Annual Advanced Vitreoretinal Techniques and Technology (AVTT) Symposium

Saturday, September 21, 2019

Friday, September 27, 2019
A Knight’s Quest - Lions of Illinois Foundation Gala
Co-hosted by Lions of Illinois Eye Research Institute

Friday, January 17 – Saturday, January 18, 2020
Allen M. Putterman, MD Oculoplastic Symposium

Saturday, February 22 – Friday, February 28, 2020
12th Annual Illinois Eye Review

March 2020
2020 UIC Cornea Symposium

October 2019
Femtosecond Laser Cataract Surgery Instructional Course and Wet Lab

Sunday, October 13, 2019
AAO Annual Meeting (San Francisco) Morning Session: Laureate Recognition Award Presentation to Marilyn T. Miller, MD

Sunday, October 13, 2019
AAO Alumni Reception

Friday, October 25 – Saturday, October 26, 2019
Biennial Ocular GVHD Conference

Wednesday, November 6, 2019
Artificial Intelligence - Ophthalmology

Friday, January 17 – Saturday, January 18, 2020
Allen M. Putterman, MD Oculoplastic Symposium

Saturday, February 22 – Friday, February 28, 2020
12th Annual Illinois Eye Review

March 2020
2020 UIC Cornea Symposium

April 2020
13th Annual Retina Symposium

May 2020
2020 Spring Glaucoma Symposium

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