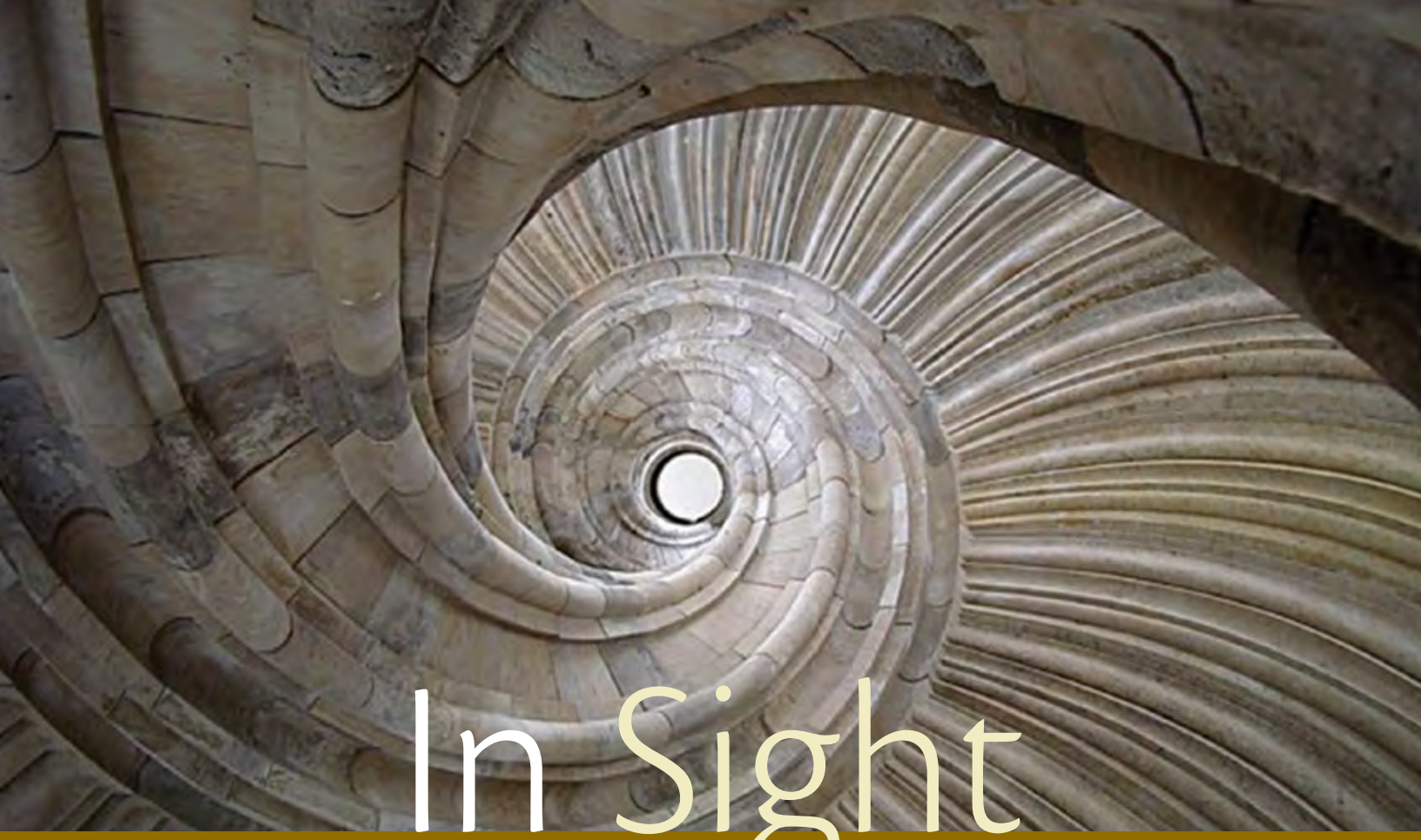


In Sight

2015 COMMUNITY REPORT

UW Medicine

DEPARTMENT OF OPHTHALMOLOGY

Our mission is to eliminate suffering from eye disease, in our community and world-wide. We do so by practicing the state-of-the-art in ophthalmology, extending the state through scientific research, and by sharing our knowledge with our students, our colleagues, and our community.

MESSAGE FROM THE CHAIR

As we begin 2016, we celebrate another successful year for the Department of Ophthalmology at University of Washington. 2015 marked our 51st year as a department, and featured continued growth and success toward our mission of eliminating suffering from eye disease.

Our faculty has continued to grow. On the research side, we welcomed four new faculty to our department. Mike Manookin, PhD is an expert in primate retinal circuitry and patch clamp physiology; Ethan Buhr, PhD is expert in circadian rhythms in the retina, and recently discovered a novel photoreceptor in this tissue; Jianhai Dua, PhD is a retinal biochemist who, along with Dr. Jennifer Chao in our department, recently described a novel metabolic pathway in the outer retina; and Ram Sabesan, PhD, is an expert in adaptive optics imaging. This group, along with our existing research faculty, have now filled the Vision Science Center located at UW Medicine's South Lake Union 3.1 building. I am truly delighted with the strong basic science group who have chosen to make our department their home.

Our clinical faculty has also grown significantly this year. We welcomed two husband-and-wife teams to our faculty. Chris and Yasmin Chambers, MD are oculoplastics specialists. Chris is practicing at the Eye Institute and at Seattle Childrens' Hospital, and has become the Associate Program Director for the residency. Yasmin is practicing at the Puget Sound VA Medical Center. Mike Banitt, MD, and Anne Ko, MD also joined our faculty. Both are experienced cornea specialists, and Mike also has fellowship training in glaucoma. Finally, Shivali Menda, MD joined us from her glaucoma fellowship in Portland, OR. All are terrific clinicians and teachers and add to our accomplished faculty.

Our Community Action Board continued to help us in our mission. The CAB is helping us develop better teaching tools in the clinic (using the magic of the smart-phone); and has continued to support our trainees and junior faculty through resident research funds and seed grants through the Latham Vision Science awards.

2015 saw the first full year of our new in-suite operating room. We performed over 400 surgeries in this new facility in the UW Medicine Eye Institute. This suite allows us to be more efficient surgeons, and patients appreciate being able to have their surgery with our staff right in our office.

In the education domain, we completed our expansion of the residency from 12 to 15 residents, and initiated two new resident rotations. The American Lake VA rotation is a cataract surgery-heavy rotation for PGY4 rotations, and allows our residents to further serve the veterans of this region. And we have initiated an exchange rotation with the residents at Madigan Army Base's ophthalmology residency. Our residents are getting primary surgeon experience at Madigan in their refractive surgery program.

Our trainees continue to thrive. This year, our five graduating residents have all matched into outstanding fellowships, in retina, oculoplastics, cornea, and glaucoma. Our fellowship trainees have found outstanding positions in academia and private practice. And once again, all of our recent trainees were able to pass their Board examinations on the first sitting.

Finally, I completed my year as President of the American Academy of Ophthalmology. I am the second UW faculty member to hold this position; Dick Mills, MD served in 1995 (and remains on the Committee of Secretaries as the long-standing editor of EyeNet magazine). I appreciate our community's support of the department and have many personal thanks for all those who made it possible for me to serve the profession in this capacity this year. I truly enjoyed my year as AAO President – but am happier still to be back full time in our department, and look forward to an outstanding 2016!

Russell N. Van Gelder, MD, PhD
Boyd K. Bucey Memorial Chair
UW Medicine Department of Ophthalmology

RESEARCH

Vision Research Scientists and Clinician Scientists are committed to the goal of improving diagnosis, treatment, and ultimately cures of diseases of the eye and visual system.

The Vision Science Center at UW Medicine's South Lake Union research facility provides collaborative opportunities, bringing together scientists from across departments to work on research that will lead to the discovery of next-generation tools for diagnosing, preventing, and treating all manner of eye disease.

ADVANCING A CURE FOR COLORBLINDNESS

Color vision deficiency (CVD), also known as red-green color blindness, is a common genetic disease that affects approximately 8 percent of males and 0.5 percent of females. Over 10 million people in the US are color blind. CVD impacts common aspects of everyday life, limits professional choices, and can affect health and safety.

Photopigments in the retina allow people to see color. Individuals with 'normal' color vision have have three different types of photopigments, which are tuned to perceive either long wavelengths (red), middle wavelengths (green) or short wavelengths (blue). These are referred to as L-, M- and S-opsins. Most people who experience CVD are missing either the L-opsin or the M-opsin. These individuals have trouble distinguishing between red and green and colors that contain red or green hues.

Jay Neitz, PhD and Maureen Neitz, PhD, have experienced significant success in their pursuit of finding a cure for color blindness. In 2009 the Neitzes showed they could correct color blindness in male squirrel monkeys using gene therapy. The monkeys are born unable to distinguish between red and green. The procedure involves inserting the human form of a gene that detects red color into a viral 'vector' and injecting it behind the retinas of the monkeys. The process proved to be a success with Sam and Dalton, two now famous squirrel monkeys, who gained the ability to distinguish red and green colors after the gene therapy.

Jay Neitz, PhD, Bishop Professor and Maureen Neitz, PhD, Ray Hill Professor
Photo by Oleksandra Makushenko

However, the need to inject the virus under the retina made this treatment too dangerous to develop for human use. The Neitzes began seeking an alternative to surgery that would position the genes to the rear of the eye with a simple shot in the jelly cavity (vitreous) of the eye. In partnership with Avalanche Biotechnologies, Inc. the Neitzes are advancing their delivery of this potential cure in a less invasive method. The technique delivers the therapy in a benign viral vector called adeno-associated virus to hold the pigment gene, which is injected directly into the gel of the eye. It then targets the back of the retina, where the DNA produces the missing photo pigment. According to Jay Neitz, it will require about 30 percent of the cells to undergo this change, and early tests show the technique meets that percentage in monkeys. In partnership with Avalanche, the Neitzes hope to have this treatment advanced to human clinical trials within the next several years. Although some tests which succeed in animals may fail in humans, both Jay and Maureen Neitz and the officials at Avalanche are cautiously optimistic that the trials will be successful. According to the Neitzes, the technique to correct colorblindness might eventually be used for other photoreceptor-based disorders, including retinitis pigmentosa, which is an inherited disorder that can lead to blindness. After pre-clinical safety trials have been completed, the goal is to conduct human trials within one to two years, followed by application to the Food and Drug Administration for approval of the treatment. It is conceivable that if and when treatment is available, it could take place in a single visit to an ophthalmologist's office. It is possible that CVD will be the first common genetic disease widely treated by gene therapy in the future.

The Neitz Labs are developing genetic tests and treatments for common vision disorders, and investigating the retinal circuitry for vision. Jay and Maureen Neitz collaborate in their studies of the visual system, taking a multidisciplinary approach that uses techniques ranging from molecular genetics to human and animal psychophysics. Major focus areas include developing gene therapy for cone-based vision disorders, investigating the role of genetic variability in the cone photo pigments in common eye diseases including AMD, myopia, and glaucoma, understanding the physiological basis for color perception. In addition, the Neitzes are developing genetic tests to identify individuals at risk for developing common eye diseases so that therapeutic interventions can be started before symptoms appear.

Fruits and vegetables are seen in muted or different shades, right, or only in shades of gray by those who lack one or more crucial proteins in their eyes' retina cone cells

Jennifer Chao, MD, PhD
Assistant Professor

THE CHAO LAB

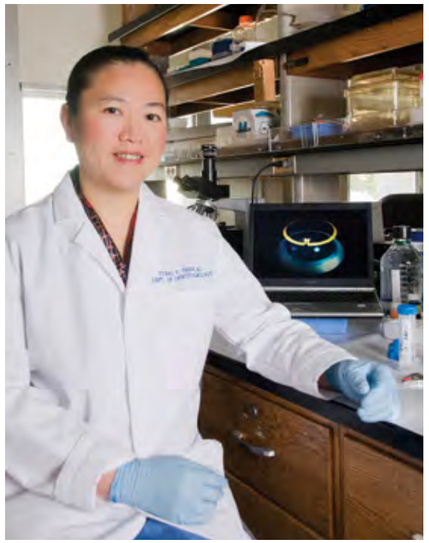
The Chao Lab is investigating potential applications of induced pluripotent stem cells (iPSCs) for treating eye diseases and identifying new drug therapies for eye disease. Like many faculty at UW Medicine, Jennifer Chao, Ph.D., M.D., a specialist in retinal diseases, sees patients and conducts research. She hopes that precision-medicine approaches will help her learn how to prevent the condition.

Tueng T. Shen, MD, PhD
Lions' Professor In Ophthalmology, Bioengineering & Global Health/Director, Refractive Surgery Center

THE SHEN LAB

The Shen Lab is developing artificial corneas and ocular biosensors for preventing blindness on a global scale.

Corneal opacity is a major cause of blindness. Using donor corneas is often not feasible due to availability and cultural barriers. Artificial corneas developed to date have shown serious limitations. The development of a new biomaterial structure with greatly improved sclera tissue integration and excellent optics shows potential to overcome many of these issues and allow construction and application of an improved prosthesis that can eventually be used to restore sight to a much wider population than is possible now. The Shen lab is also developing microelectronic wi-fi biosensors to allow physicians to monitor the health of patients remotely. The overarching goal is to treat global blindness by leveraging technological advancements in polymer sciences.



Michael B. Manookin, PhD
Assistant Professor

THE MANOOKIN LAB

Research in the Manookin lab is focused on the computations performed by neural circuits, the mechanistic underpinnings of those computations, and their effects on perception. The macaque monkey retina serves as the ideal model for understanding how neural circuits transform a visual stimulus into a behavioral percept. The lab's first major goal is to work out the circuitry of the macaque monkey retina—a model system that is essentially identical to the human retina. The electrical responses of retinal cells to novel visual stimulation are measured and the findings are linked to human perception using psychophysical measurements. The Manookin lab also collaborates with the Van Gelder lab to test the efficacy of techniques for restoring vision to the blind.

Ethan Buhr, PhD
Research Assistant Professor

THE MAKING OF THE MASTER CLOCK

Dr. Buhr's long-term interests center around ways in which circadian oscillators entrain to their environments. He studies the pathways by which mammalian circadian clocks are synchronized to light.

Jianhai Du, PhD

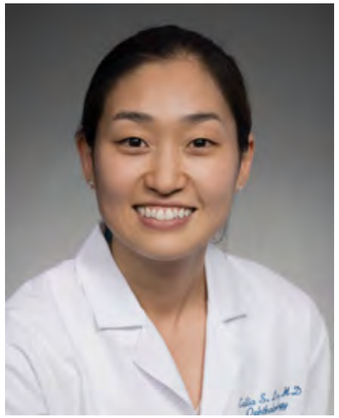
Research Assistant Professor

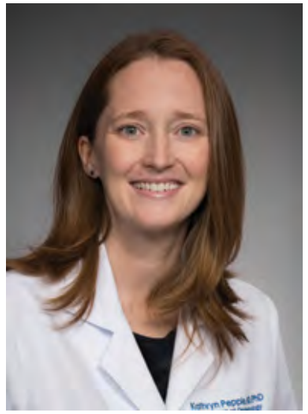
Dr. Du's research investigates cell metabolism in retina and retinal degenerative diseases. By combining stable isotope labeling with state-of-the-art mass spectrometry, new metabolic pathways are identified among photoreceptors, glial cells and retinal pigment epithelium (RPE) cells, as well as how metabolism is re-wired in inherited retinal degenerations. In collaboration with clinicians, metabolites and metabolite transport in patients with retinal degenerative diseases and patient-derived diseased retinal cells with induced pluripotent stem cells (IPSC) technology are studied, with the ultimate goal of translating these findings to clinical therapeutics in the treatment of the blindness.

Cecilia S. Lee, MD

Assistant Professor

Dr. Lee is a UW Medicine Assistant Professor of Ophthalmology and clinician-scientist. Dr. Lee divides her time between seeing patients with retinal conditions, performing cataract extractions, teaching and pursuing her research in medical retina and uveitis. Her research interests are focused in diseases of the retina and uveitis. She is dedicated in improving our knowledge on pathogens' role in various ocular conditions and understanding the clinical outcome. She is also interested in using non-invasive imaging modalities to find new biomarkers to predict the outcomes of different retinal diseases. Dr. Lee recently received a prestigious K23 clinician-investigator award from the National Institutes of Health.





Kathryn L. Pepple, MD, PhD

Assistant Professor

Dr. Pepple is a UW Medicine Assistant Professor of Ophthalmology. She specializes in uveitis, including iritis, pars planitis, retinitis, choroiditis and scleritis, and medical retinal disease including age related macular degeneration, diabetic retinopathy, and retinal vascular diseases. Dr. Pepple's laboratory is interested in understanding the pathogenesis of ocular inflammation, and developing new therapies to treat patients with uveitis. Her lab is also interested in novel applications of advanced imaging modalities such as optical coherence tomography (OCT) and IVIS in clinical and pre-clinical studies of uveitis. Dr. Pepple recently received a prestigious K08 Clinician-Scientist training award from the National Institutes of Health.

Ramkumar Sabesan, PhD

Research Assistant Professor

Dr. Sabesan's research group studies how the human retina enables the fundamental, yet, intricate aspects of our daily vision - color, motion and so on; and how such visual capacities are disrupted in the face of retinal diseases. To achieve this, they develop and use novel imaging tools which enable them to see, stimulate, manipulate and record the functional activity of individual retinal cells in living humans. Ultimately, they aim to use these high-resolution functional assays as biomarkers for early disease diagnosis and end-points for the treatment of blinding retinal disorders.

EYE STUDY CREATES INTRIGUE: DO OTHER BODY AREAS SENSE LIGHT?

Discovery of that function in cornea raises hypotheses for undiscovered circadian-rhythm effects

BY BRIAN DONOHUE

PUBLISHED IN UW HEALTH SCIENCES NEWSBEAT 10.05.2015

The study found that neuropsin, a protein in the retina and cornea, can sense light.
This is an enticing result because neuropsin is also expressed in the skin and other parts of the body.

The study found that neuropsin, a protein in the retina and cornea, can sense light. This is an enticing result because neuropsin is also expressed in the skin and other parts of the body.

Only relatively recently, in 2002, was it proven that the retina can sense light in its role to help synchronize our body clocks to Earth's cycle of light and darkness.

"Many interesting testable hypotheses follow from this finding," said Dr. Russell Van Gelder.

A just-published discovery – that the cornea is a light-sensitive tissue, too – has ophthalmologist Russell Van Gelder excited about the rest of the body's potential interplay with circadian rhythms.

"Now we know that people have more photo sensors in their eye and body than was previously guessed, but the speculation of what comes next might be the most exciting aspect of this," said Van Gelder, director of UW Medicine's Eye Institute. He was a co-lead of the study published recently in PNAS (Proceedings of the National Academy of Sciences).

The study's most compelling finding was that neuropsin, a protein in the retina and cornea whose function in mammals was heretofore unknown, can sense light. Retinas and corneas kept in tissue culture could synchronize their daily rhythms to a light-dark cycle; retinas and corneas that lacked neuropsin could not do so.

This is an enticing result because neuropsin is also expressed in the skin and other parts of the body.

"It lets us consider what other types of physiology might be linked to these photoreceptors, and how we could co-opt these to help manage diseases," said Van Gelder, UW professor and chair of ophthalmology.

"For example, we don't know exactly what triggers sun-tanning. That's an example of a phenomenon that is light-sensitive but nobody really knows the receptor for it. We don't know what causes light sensitivity in people with lupus and other collagen vascular diseases, or why light therapy works to treat certain skin diseases. Your organs may have access to knowing whether it's light or dark outside, and adjust their metabolism appropriately."

Within the eye, neuropsin now is the sixth working photopigment scientists have identified. Van Gelder has long used a camera analogy with patients who face vision diseases and disorders to explain how these systems work.

"The cornea and eye's lens are like the lens of the camera, focusing light, and the retina is like the film or the sensor in the back, where the image is created. For many years people viewed the eye as if it were an old-style camera, without a light meter. The discovery of the first non-visual opsin, melanopsin (1998), identified the first light meter in the eye. Just like a light meter, melanopsin measures the brightness of light but it doesn't contribute to the image.

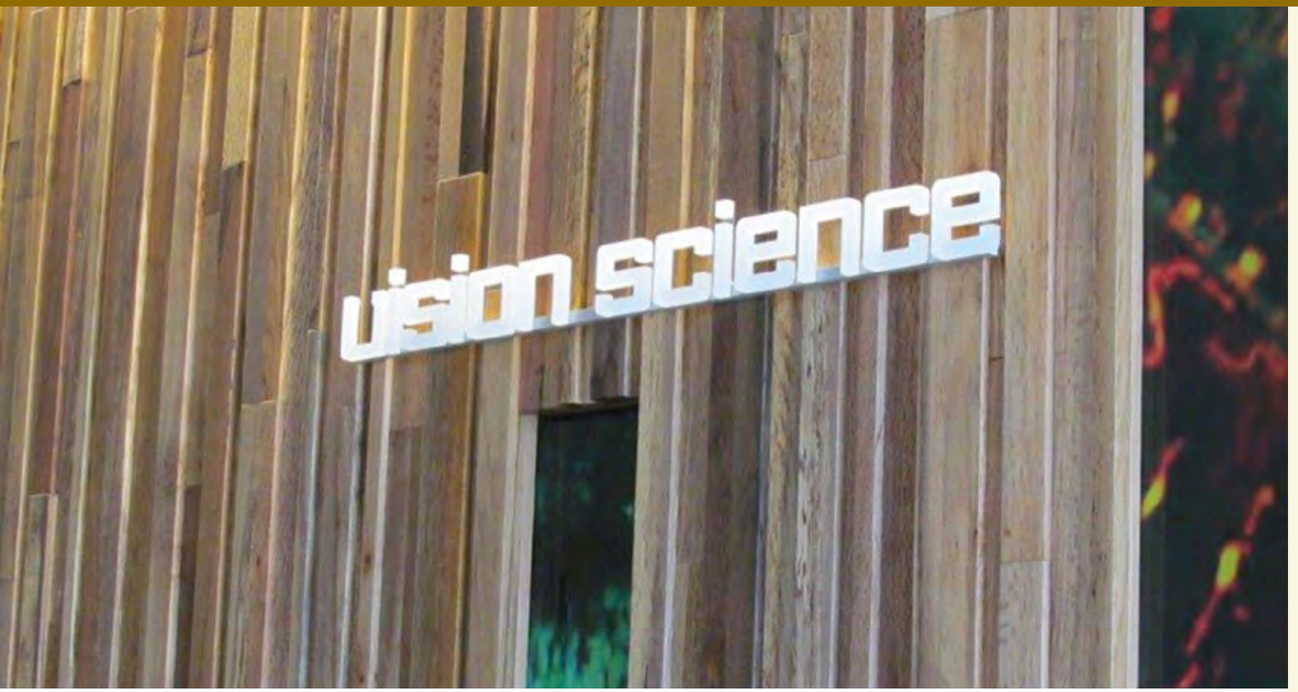
"The new opsins, including neuropsin and encephalopsin, suggest there is not just one light meter in the eye but multiple light meters that serve different functions. No one would've guessed that 20 years ago," he said. "Now our goal is to figure out exactly how these light meters work and what functions they control."

Although this study's finding spotlighted new capability of the cornea, Van Gelder said, it also suggests that the retina is more complex than was previously suspected.

"We didn't think the retina needed another photopigment; it has five we already know about. What's remarkable is that it doesn't use any of those pigments to synchronize its own circadian rhythms to the light-dark cycle."

"Figuring out why evolution found advantage in using neuropsin is a question that will engage us for the foreseeable future."

UW research assistant professor Ethan Buhr was first author of this work, which was done in collaboration with the laboratories of King Wai Yau at Johns Hopkins University and Richard Lang at Cincinnati Children's Hospital. The study was supported by National Institutes of Health grants F32EY02114, EY14596, EY23179 and EY001370.



THE CORE GRANT FOR VISION RESEARCH

The Vision Core Lab at UW Medicine South Lake Union provides shared instrumentation, expertise, and services to NEI funded vision Scientists

The Core Grant for Vision Research provide groups of investigators who have achieved independent National Eye Institute (NEI) funding with additional, shared support to enhance their own and their institution's capability for conducting vision research. Secondary objectives of this program include facilitating collaborative studies and attracting other scientists to research on the visual system.

The Vision Core Grant is comprised of three modules, each of which offers shared instrumentation, and module scientists to help investigators. The Cellular Module includes a JEOL 1230 transmission electron microscope, Olympus FV1000 Confocal microscope, a Nikon Widefield microscope, a serial block face scanning electron microscope (Gatan 3View and Sigma VP SEM). The Systems Module includes a shared electrophysiology rig, ERG instrumentation, a Micron II fundus Imaging system for mice, and a RetCamII imaging system for animal research. The Molecular Module includes a custom antibody making service, help with immunohistochemistry, intraocular injection equipment, and access to several specialty centrifuges.

VISION SCIENCE RESEARCH FACULTY & ASSOCIATES

Ethan Buhr PhD
Research Assistant Professor (Ophthalmology)

Susan E Brockerhoff PhD
Adjunct Professor (Biochemistry)

John I. Clark, PhD
Adjunct Professor (Biological Structure)

Jennifer Chao, MD, PhD
Assistant Professor (Ophthalmology)

Jainhai Du, PhD
Research Assistant Professor (Ophthalmology)

Ione Fine, PhD
Professor (Psychology)

Anita Hendrickson, PhD
Professor Emerita, (Biological Structure)

Jim Hurley, PhD
Adjunct Professor (Biochemistry)

Dirk Keene, MD, PhD
Adjunct Professor (Pathology)

Murray Johnstone, MD
Clinical Professor (Ophthalmology)

John P. Kelly, PhD
Affiliate Assistant Professor, Seattle Children's Hospital

Aaron Lee, MD
Assistant Professor (Ophthalmology)

Cecilia Lee, MD
Acting Assistant Professor (Ophthalmology)

Mike Manookin, PhD
Assistant Professor (Ophthalmology)

Ann Milam, PhD
Professor Emerita (Ophthalmology)

Mike Mustari, PhD
Research Professor (Ophthalmology)

Jay F. Neitz, PhD
Bishop Professor (Ophthalmology)

Maureen E. Neitz, PhD
Ray Hill Professor (Ophthalmology)

Roberta Pagon, MD
Adjunct Professor (Clinical Genetics, Pediatrics)

Kathryn Pepple, MD, PhD
Assistant Professor (Ophthalmology)

Thomas A. Reh, PhD
Adjunct Professor (Biological Structure)

Frederick M. Rieke, PhD
Adjunct Professor (Physiology and Biophysics)

John C. Saari, PhD
Professor Emeritus (Ophthalmology)

Ram Sabesan, PhD
Research Assistant Professor (Ophthalmology)

Tueng T. Shen, MD, PhD
Lions' Professor (Ophthalmology)

Russell Van Gelder, MD, PhD
Boyd K. Bucey Professor and Chair (Ophthalmology)

Ruikang "Ricky" Wang, PhD
Adjunct Professor (Bioengineering)

Rachel Wong, PhD
Adjunct Professor (Biological Structure)

Jing Zhang, PhD
Adjunct Professor (Neuropathology)

SELECT GRANTS AND TRIALS

Clinical trials and other non-federal grants and trials are the tools of translation between patient care and research

Diabetic Retinopathy Clinical Research (DRCR)

SPONSOR: Jaeb Center for Health Research, Inc. (JCHR)
PERIOD: 2014-2018

A Prospective Case-crossover Study to Evaluate the Possible Association Between the Use of PDE5 Inhibitors and the Risk of Acute Nonarteritic Anterior Ischemic Optic Neuropathy

SPONSOR: Eli Lilly and Company
PERIOD: 2012-2015

Personalized Medicine for Macular Degeneration: High Throughput Screening for Small Molecule Therapeutics

SPONSOR: Bill and Melinda Gates Foundation
PERIOD: 2010-2015

Microbiome analysis of the ocular surface in dry eye disease

SPONSOR: Alcon Laboratories, Inc.
PERIOD: 2012-2017

Myopia risks and disease mechanisms

SPONSOR: National Institutes of Health (NIH)
PERIOD: 2011-2016

Genes and visual pigments of red-green color vision

SPONSOR: National Institutes of Health (NIH)
PERIOD: 2011-2015

Nano Grant-Function of nano-medical compounds in the treatment of blindness

SPONSOR: UC Berkeley/NATIONAL INSTITUTES OF HEALTH
PERIOD: 2010-2015

Photo switchable channel blockers for treatment of blindness

SPONSOR: NATIONAL EYE INSTITUTE
PERIOD: 2014-2019

K08-Stem-cell properties of human corneal keratocytes

SPONSOR: NATIONAL INSTITUTES OF HEALTH
PERIOD: 2010-2015

Light encoding properties of wiry-type and starburst aamcrine cells of the primate retina

SPONSOR: NATIONAL INSTITUTES OF HEALTH-1F32EY024507
PERIOD: 2014-2016

Flare photometry in uveitis patients

SPONSOR: National Institutes of Health
PERIOD: 2013-2015

K08-The role of the innate and adaptive immune system in a novel mouse model uveitis

SPONSOR: NATIONAL EYE INSTITUTE-EY023998
PERIOD: 2014-2019

Double-Masked Randomized Sham-Controlled Trial of QPI-1007 Delivered by a Single Intravitreal Injection to Subjects with Acute Primary Angle-Closure Glaucoma (APACG)

SPONSOR: Quark Pharmaceuticals
PERIOD: 2013-2016

K23-The ocular surface microbiome in potentially infectious ophthalmic disease

SPONSOR: NATIONAL INSTITUTES OF HEALTH
PERIOD: 2014-2019

SCORE2 (Clinical Trial)-SCORE2 Comparative Trial (SCT)-Pennsylvania State University

SPONSOR: NATIONAL INSTITUTES OF HEALTH ~~(Subcontract)~~
PERIOD: 2014-2018

F32 Grant-Functional imaging of retinal ganglion cells receiving s-cone inputs using viral-delivered arclight

SPONSOR: NATIONAL INSTITUTES OF HEALTH
PERIOD: 2014-2017

PATIENT CARE

The Eye Institute opened in the Ninth and Jefferson Building at Harborview Medical Center in July 2009 and has over 25,000 square feet of clinic space. It is the flagship clinic of the UW Medicine Department of Ophthalmology. Other sites associated with the department are located at Harborview Medical Center, University of Washington Medical Center, Seattle Children's Hospital and Medical Center, and the Veterans Administration Puget Sound Medical Center.

UW MEDICINE EYE INSTITUTE FAST FACTS

PATIENT CARE

27,000 patients per year + **1,800** surgical procedures

Physicians in the Eye Institute see about 27,000 patients per year and perform more than 1,800 surgical procedures.

The Eye Institute covers the full range of ophthalmic specialties – from retinal diseases, to glaucoma, to neuro-ophthalmological diseases, to elective services.

Faculty members of UW Ophthalmology also serve adult patients at other UW Medicine entities, pediatric patients at Seattle Children's Hospital, and veterans at the Puget Sound Veterans Administration Health Care System.

The UW Medicine Eye Institute is the only full-service ophthalmology trauma service in the states of Washington, Wyoming, Alaska, Montana and Idaho.

FACULTY

47 faculty members

7 Ph.D. scientists

6 faculty who hold both MD and PhD degrees

The Department of Ophthalmology currently has 47 faculty members, including 7 Ph.D. scientists and 6 faculty who hold both MD and PhD degrees.

EDUCATION

15 ophthalmologists

9,000 hours of training

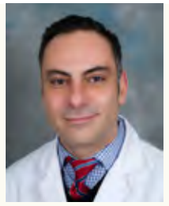
The department educates 15 resident ophthalmologists through its ACGME accredited training program, provides 9,000 hours of training, and has an pathology/research rotation.

4 fellowships

The department sponsors 4 fellowships, specializing in medical retina and vitreoretinal surgery, oculoplastics, uveitis, and pediatric ophthalmology.

UW MEDICINE OPHTHALMOLOGY PATIENT CARE FACULTY

COMPREHENSIVE



Eissa Hanna, MD

Dr. Hanna is an assistant professor of ophthalmology at the University of Washington and is the director of Consult Services for Harborview Medical Center's 4West Clinic.

EDUCATION

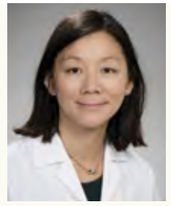
MD - University of California, Davis
Residency - Penn State University
Fellowship - Harvard University

PATIENT CARE PHILOSOPHY

He believes that the patient-physician relationship is built on trust and maintained through patient education. Ultimately, it is both the patient and the physician who work together for the desired outcome.

SCOPE OF CARE

As a comprehensive ophthalmologist, Dr. Hanna treats a wide variety of conditions that affect the eye and eyelids.



Anne Ko, MD

Dr. Ko is an acting assistant professor of ophthalmology at the University of Washington. She specializes in the treatment of cornea and external diseases.

EDUCATION

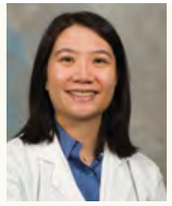
BS - Neuroscience, Brown University
MD - Brown University
Internship - Internship, Cabrini Medical Center, Mount Sinai School of Medicine
Residency - Ophthalmology, New York Eye and Ear Infirmary
Fellowships - Cornea and External Disease, USC/ Doheny Eye Institute

PATIENT CARE PHILOSOPHY

My role as a physician involves giving patients the information they need to make an informed decision about their care.

SCOPE OF CARE

Comprehensive Ophthalmology and Cornea and External Disease



Deborah L. Lam, MD

Dr. Lam is a comprehensive ophthalmologist, UW assistant professor, and chief of ophthalmology. She is an attending physician at the Veterans Affairs Puget Sound Healthcare system.

EDUCATION

BA - Northwestern University, Evanston, IL
MD - Northwestern University, Evanston, IL
Residency - University of Washington Hospitals, Seattle, WA
Chief Residency - University of Washington Hospitals, Seattle, WA

PATIENT CARE PHILOSOPHY

She believes the foundation of the patient-physician relationship is communication. Her care is focused on the needs of her patients and their families.

SCOPE OF CARE

Diagnosis and treatment of a comprehensive range of eye conditions, including such entities as cataract, glaucoma, diabetic retinopathy, macular degeneration, ocular surface diseases and eye trauma.

COMPREHENSIVE *continued*

Parisa Taravati, MD

Dr. Taravati is an assistant professor and director of the Eye Center at UWMC. Her primary clinical interest is comprehensive ophthalmology. Dr. Taravati also serves as the residency program director.

EDUCATION

BS - University of Iowa

MD - University of Iowa

Residency - University of Iowa Hospitals & Clinics

PATIENT CARE PHILOSOPHY

Dr. Taravati believes in educating her patients on their eye conditions and allowing them to actively participate in their medical care.

SCOPE OF CARE

Dr. Taravati is a comprehensive ophthalmologist who treats patients through both medical and surgical procedures, as well as in-office exams. She manages a wide range of eye conditions, including dry eye, blepharitis, cataracts, glaucoma, and color blindness.

Shivali Menda, MD

Dr. Menda is an acting assistant professor of ophthalmology at the University of Washington. She focuses on the surgical treatment of glaucoma, as well as comprehensive ophthalmology and complex cataract surgery.

EDUCATION

BS - Neurobiology - University of Washington

MD - Oregon Health & Science University

Internship - Providence Portland Medical Center

Residency - Ophthalmology, University of California, San Francisco,

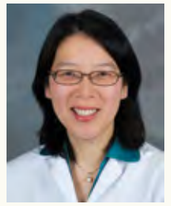
Fellowship - Glaucoma, Casey Eye Institute and Devers Eye Institute

PATIENT CARE PHILOSOPHY

I want to provide all my patients with personalized and high-quality care. I believe that education is at the core of partnership that I strive to have with all my patients.

SCOPE OF CARE

The medical and surgical treatment of glaucoma, comprehensive ophthalmology, and complex cataract surgery.



Jennifer T. Yu, MD, PhD

Dr. Yu is a UW clinical associate professor and an attending physician at 4 West Clinic at Harborview Medical Center. Her clinical interest is in comprehensive eye care including dry eyes, blepharitis, cataracts and cataract surgery, glaucoma, diabetes in the eye and macular degeneration.

EDUCATION

BS - University of Michigan, Ann Arbor, MI

PhD - Washington University School of Medicine

MD - Washington University School of Medicine

Residency - Washington University School of Medicine

PATIENT CARE PHILOSOPHY

She believes good patient care starts with listening to the patient and addressing his or her concerns. She also believes that health care is a partnership between the physician and the patient. This involves patient education and helping the patient make informed decisions.

SCOPE OF CARE

She is a comprehensive ophthalmologist who diagnoses and treats a wide range of eye conditions such as dry eye, cataracts and glaucoma.

CORNEA AND EXTERNAL DISEASE / REFRACTIVE SURGERY

Michael Banitt, MD

Dr. Banitt is an associate professor of ophthalmology at the University of Washington. He specializes in cornea and refractive surgery, glaucoma.

EDUCATION

BS - Biology, St. Louis University; BA, Chemistry, St. Louis University

MD - Wayne State University School of Medicine

Master Health Administration - St. Louis University of Public Health

Internship - Internal Medicine Beth Israel Medical Center

Residency - Ophthalmology, New York Eye and Ear Infirmary

Fellowship - Cornea and External Disease, Kellogg Eye Institute; Glaucoma, Bascom Palmer Eye Institute

PATIENT CARE PHILOSOPHY

My goal is to give each patient the care I would give my family, to apply the best scientific evidence and most appropriate treatments, and to help the patient make the best medical decision they are able to make with the latest information."

SCOPE OF CARE

Cornea and refractive surgery, glaucoma.

Hoon C. Jung, MD

Dr. Jung is a UW assistant professor of ophthalmology and joined the VA Puget Sound Health Care System in 2014.

EDUCATION

BS - Cornell University

MD - University of Rochester

Intern - Transitional Year, United Health Services

Residency - Ophthalmology, University at Buffalo

Fellowship - Cornea and External Disease, University of Rochester

PATIENT CARE PHILOSOPHY

Each visit between a physician and patient should lead one step further in the pursuit of improved understanding of health and delivery of personalized care.

SCOPE OF CARE

Dr. Jung specializes in treatment of cataract and corneal diseases.

Tueng T. Shen, MD, PhD

Dr. Shen is a UW professor of ophthalmology and an adjunct in bioengineering. She specializes in refractive surgery, cataract surgeries and medical and surgical management of corneal disorders. She also established this region's artificial cornea transplant program to treat severe corneal blindness.

EDUCATION

BA - Wellesley College and Oxford University

PhD - Massachusetts Institute of Technology

MD - Harvard Medical School

Residency - Massachusetts Eye and Ear Infirmary, Harvard

Fellowship - Cornea/Refractive, Moran Eye Center

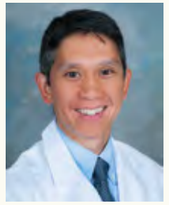
PATIENT CARE PHILOSOPHY

Dr. Shen is committed to delivering the best eye care possible by providing the most advanced treatment options and by developing better technologies to restore vision for patients with challenging corneal conditions. She strongly believes that patients deserve a physician who listens, keeps them well-informed and is a partner in accomplishing the best treatment plan customized to each patient's needs.

SCOPE OF CARE

Refractive surgeries (laser and non-laser surgeries) to minimize refractive errors and reduce dependence on glasses or contact lenses, cataract surgeries, corneal surgeries (PKP, DSEK, artificial cornea surgeries, conjunctival surgeries, stem cell transplant surgeries) and medical management of all areas of corneal diseases.

GLAUCOMA



Philip P. Chen, MD

Dr. Chen is the Grace E. Hill Chair in Vision Research, professor and chief of ophthalmology at UW Medical Center and Harborview Medical Center.

EDUCATION

BS - Stanford University

MD - Yale University

Residency - Doheny Eye Institute

Fellowship - Glaucoma, Bascom Palmer Eye Institute

PATIENT CARE PHILOSOPHY

Dr. Chen's professional passion is to prevent blindness caused by glaucoma.

SCOPE OF CARE

All types of glaucoma and cataracts, particularly complex glaucoma and cataract surgery.

Raghu Mudumbai, MD

Dr. Mudumbai is an UW associate professor of ophthalmology and an attending physician at the UW Medicine Eye Institute at Harborview Medical Center. Dr. Mudumbai specializes in glaucoma, neuro-ophthalmology, and treats patients with multiple sclerosis.

EDUCATION

BA - City University of New York

MD - State University of New York

Residency - State University of New York Health Science Center

Fellowship - Glaucoma, New York Eye and Ear Infirmary; Neuro-Ophthalmology, University of Minnesota

PATIENT CARE PHILOSOPHY

He takes a patient-centered approach and is excited to be practicing at a time when recent advances in multiple sclerosis treatment offer real hope to patients.

SCOPE OF CARE

Glaucoma, Multiple Sclerosis, Strabismus

Joanne C. Wen, MD

Dr. Wen is an assistant professor of ophthalmology at the University of Washington. She specializes in the medical and surgical management of glaucoma.

EDUCATION

BA - Harvard University

MD - University of California at Los Angeles

Internship - Internal Medicine, Cedars-Sinai Medical Center

Residency - University of California at Los Angeles

Fellowship - Glaucoma, Duke University

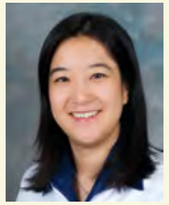
PATIENT CARE PHILOSOPHY

Dr. Wen believes in educating and working with her patients to develop a management plan that maximizes the prevention of glaucoma-related blindness.

SCOPE OF CARE

Dr. Wen's clinical interests include the medical and surgical management of glaucoma and cataracts.

MEDICAL AND SURGICAL RETINA



Jennifer Chao, MD, PhD

Dr. Chao is an assistant professor and attending physician at the UW Eye Institute at Harborview Medical Center. She is a clinician scientist who specializes in diseases of the retina, vitreous, and macula.

EDUCATION

BS - Stanford University

PhD - Yale University

Residency - USC/Doheny Eye Institute

Fellowship - Vitreoretinal Surgery, USC/Doheny Eye Institute

PATIENT CARE PHILOSOPHY

Dr. Chao is dedicated to bringing the highest quality of care to her patients by offering the most up-to-date diagnostic and treatment options to her patients. She enjoys partnering with her patients in their care, listening to them, and keeping them informed of the latest in current research regarding challenging retinal diseases.

SCOPE OF CARE

Dr. Chao offers both medical and surgical treatments for vitreoretinal diseases. She has a particular interest in patients with hereditary retinal degenerations.

James L. Kinyoun, MD

Dr. Kinyoun is a UW professor of ophthalmology and attending physician at the UW Eye Institute at Harborview Medical Center, who specializes in medical and surgical diseases of the retina and vitreous. His clinical research interests include diabetic retinopathy and retina complications of prior radiotherapy.

EDUCATION

BS - University of Nebraska

MD - University of Nebraska College of Medicine

Intern - Medical College of Wisconsin

Residency - Medical College of Wisconsin

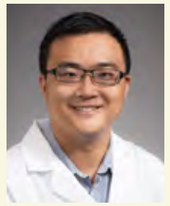
Fellowship - Retina and Vitreous, University of Minnesota

PATIENT CARE PHILOSOPHY

Each patient is unique and deserves individual attention regarding final diagnosis and selection of treatment. What worked very well for the last patient with the same eye problem may not be the best treatment choice for every patient. Educating each patient about the diagnosis and treatment options available allows the patient to become a part of the decision-making process.

SCOPE OF CARE

Medical and surgical care of retina and vitreous diseases including retinal detachment, diabetic retinopathy, vitreous hemorrhage, age-related macular degeneration, and other macular abnormalities with intravitreal injections, vitrectomy, scleral buckle, laser photocoagulation, and lensectomy. Preoperative evaluations include interpretation of fluorescein angiography, B-scan ultrasonography and optical coherence tomography.



Aaron Lee, MD, MS

Dr. Lee is an assistant professor of ophthalmology at the University of Washington and attending physician at the VA Puget Sound Health Care System , who specializes in vitreoretinal and macular diseases including epiretinal membranes, macular hole repair, retinal detachment repair, and hereditary macular dystrophies.

EDUCATION

BS - Biochemistry, 2004

MD - Washington University School of Medicine, 2009

MS - Washington University School of Medicine, 2009

Internship - Internal Medicine, St. John's Mercy Medical Center, 2010

Residency - Ophthalmology, Washington University School of Medicine, 2013

Fellowships - Medical Retina, Moorfields Eye Hospital, 2014; Surgical Retina, University of British Columbia, 2015

PATIENT CARE PHILOSOPHY

As a clinician scientist, I am excited to help translate the latest breakthroughs in research into clinical care and to leverage the resources and facilities of University of Washington to provide excellent patient care.

SCOPE OF CARE

Vitreoretinal and macular diseases including epiretinal membranes, macular hole repair, retinal detachment repair, and hereditary macular dystrophies.

MEDICAL AND SURGICAL RETINA *continued*

Richard S. Munsen, MD

Dr. Munsen is a UW clinical associate professor and an attending physician at the UW Eye Institute at Harborview Medical Center. His sub-specialty is diseases and surgery of the retina and vitreous.

EDUCATION

BA - St. Olaf College

MD - University of Iowa

General Medical Officer (general practice medicine) - US Air Force

Residency - University of Michigan

Fellowship - Diseases and Surgery of the Retina, Vitreous University of Iowa.

PATIENT CARE PHILOSOPHY

Dr. Munsen treats all patients as if they were family members. The patient always comes first.

SCOPE OF CARE

His expertise includes consultation for all types of retinal, vitreous and macular problems, as well as any laser treatment, injections or surgery for these problems.

Kasra Rezaei, MD

Dr. Rezaei is an UW assistant professor of ophthalmology and attending physician at the UW Eye Institute at Harborview Medical Center.

EDUCATION

MD, Azad University, Tehran, Iran

Internship, General Surgery, Vanderbilt University

Residency, Vanderbilt Eye Institute, Vanderbilt University

Fellowship - Vitreo-Retinal Fellowship, Associated Retina Consultants

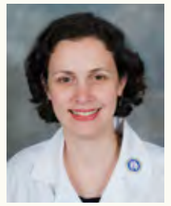
PATIENT CARE PHILOSOPHY

It is a great honor to participate in the care of patients and improve their vision and quality of life.

SCOPE OF CARE

Dr. Rezaei's clinical interests include the management of complex retinal detachments, diabetic retinopathy, retinal vascular occlusions, and age related macular degeneration.

NEURO-OPHTHALMOLOGY



Courtney Francis, MD

Dr. Francis is an assistant professor of ophthalmology and an attending physician at the UW Eye Institute at Harborview Medical Center. Dr. Francis is a clinician educator with primary clinical interest in neuro-ophthalmology. She also cares for adult patients with strabismus.

EDUCATION

BS - Brown University

MD - University of Rochester

Residency - University of Alabama at Birmingham School of Medicine

Fellowship - Neuro-Ophthalmology, University of Southern California Keck School of Medicine

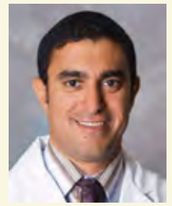
PATIENT CARE PHILOSOPHY

Dr. Francis enjoys educating her patients on their diagnoses and making them active participants in their medical care.

SCOPE OF CARE

Dr. Francis specializes in neuro-ophthalmology. She treats patients with optic neuropathies, cranial nerve palsies, idiopathic intracranial hypertension, tumors involving the visual pathways, in addition to patients with systemic diseases such as multiple sclerosis, myasthenia gravis and Grave's disease. She offers both medical and surgical treatments for adult strabismus.

OCULOPLASTICS AND ORBITAL SURGERY



A.J. Amadi, MD

Dr. Amadi is a UW clinical assistant professor of ophthalmology and attending physician at 4 West Clinic at Harborview Medical Center.

EDUCATION

BS - Rensselaer Polytechnic Institute

MD - State University of New York

Residency - New York University Medical Center

Fellowships - Eye Pathology/Ocular Oncology, Harvard Medical School, Massachusetts Eye and Ear Infirmary; Oculofacial Surgery, Department of Ophthalmology, University of Washington,

PATIENT CARE PHILOSOPHY

Patients always come first.

SCOPE OF CARE

Orbital and ophthalmic/facial plastic surgery.

Christopher Chambers, MD

Dr. Chambers is an assistant professor of ophthalmology at the University of Washington. He specializes in pediatric ophthalmology, oculofacial plastic and orbital surgery.

EDUCATION

BS - University of Notre Dame

MD - The Ohio State University College of Medicine

Internship - Internal Medicine, Resurrection Medical Center

Residency - Ophthalmology, Kresge Eye Institute

Fellowship - Ophthalmic Plastic and Reconstructive Surgery, University of Pennsylvania

PATIENT CARE PHILOSOPHY

Outstanding medical care should focus on treating the disease as well as the individual patient

SCOPE OF CARE

Pediatric ophthalmology, oculofacial plastic and orbital surgery

Shu-Hong (Holly) Chang, MD

Dr. Chang is a UW clinical assistant professor of ophthalmology and attending physician at the UW Eye Institute at Harborview Medical Center. She cares for patients with plastic surgery disorders affecting the eyelids, nasolacrimal system, orbit, face, and neck.

EDUCATION

BA - Duke University

MD - Johns Hopkins University

Residency - Washington University

Fellowships - Ophthalmic Pathology, Washington University; Oculoplastic Surgery, University of California

PATIENT CARE PHILOSOPHY

As an ophthalmic pathologist as well as orbital and oculofacial plastic surgeon, Dr. Chang understands the microscopic basis of diseases, but approaches each patient as individuals with unique reconstructive and aesthetic goals.

SCOPE OF CARE

Dr. Chang provides medical and surgical care for patients with all forms of ptosis (droopy eyelids and eyebrows), nasolacrimal duct disease, orbital tumors/inflammation, Graves disease, eye socket abnormalities, facial skin cancers, and facial trauma. Cosmetic procedures include botulinum toxin injections, periocular and facial synthetic and fat fillers, chemical and laser skin resurfacing, eyebrow and eyelid lifts, and face/neck rejuvenation.

OCULOPLASTICS AND ORBITAL SURGERY *continued*

Yasmin Shayesteh, MD

Dr. Shayesteh is an acting assistant professor of ophthalmology at the University of Washington. She specializes in oculofacial plastics and orbital Surgery.

EDUCATION

BS - Microbiology, California Polytechnic State University
MD - Georgetown University School of Medicine
Internship - Internal Medicine, New York Medical College
Residency - Ophthalmology, George Washington University
Fellowship - Oculoplastics, University of Pennsylvania

SCOPE OF CARE

Oculofacial plastics and orbital surgery.

ONCOLOGY AND OCULAR TUMORS

Robert E. Kalina, MD, Professor Emeritus

Dr. Kalina is a UW professor emeritus and past chair of the UW Department of Ophthalmology. He is past president of UW Physicians, director emeritus of the American Board of Ophthalmology and a recipient of the Life Achievement Honor Award of the American Academy of Ophthalmology.

EDUCATION

BA - University of Minnesota
BS - University of Minnesota
MD - University of Minnesota Medical School
Residency in Ophthalmology - University of Oregon Medical School
Special Fellow - National Institute of Neurological Diseases and Blindness, Massachusetts Eye and Ear Infirmary

PATIENT CARE PHILOSOPHY

Dr. Kalina thoroughly enjoys meeting patients and trying to help them solve their health problems.

SCOPE OF CARE

Intraocular tumors and retinal diseases, particularly retinal degenerations; inherited retinal diseases; and retinopathy of prematurity.

OPTOMETRIC SERVICES

Claire Angel, OD

Dr. Angel is a UW teaching associate; her clinical focus is on corneal disease. She was the clinical director of Omni Eye Services and the Optometric Director of Refractive Services at TLC Laser Eye Centers and was in private practice for 15 years.

EDUCATION

BS - Southern College of Optometry
OD - Southern College of Optometry
Post-graduate - Omni Eye Services

PATIENT CARE PHILOSOPHY

Compassion and individual attention are critical in providing patients with highest standards of comprehensive optometric eye care. Dr. Angel believes in giving patients a thorough explanation and providing them with the tools to be proactive in their care. She feels fortunate to work with an outstanding team at the UW that synchronizes care to provide patients with a seamless experience.

SCOPE OF CARE

Comprehensive optometric eye care which includes annual eye examinations, baseline dilated fundus exam for patients diagnosed with systemic diseases and evaluation, treatment and appropriate referrals for red eye.

Tiffany Hollenbeck, OD

Dr. Hollenbeck is a UW teaching associate and optometrist who practices at Eyes on James Optical Shop and the UW Neighborhood Clinics. Prior to joining UW Medicine, Dr. Hollenbeck worked in private optometry and ophthalmology practices for 10 years. After working in a group practice, Dr. Hollenbeck built a private clinic in Redmond, Washington, working largely with primary care and contact lenses.

EDUCATION

BS - Biology and Natural Science, Gustavus Adolphus College
OD - Pacific University College of Optometry

PATIENT CARE PHILOSOPHY

Dr. Hollenbeck is compassionate with her patients and believes in providing them with the knowledge needed to be proactive with their eye health.

SCOPE OF CARE

Dr. Hollenbeck provides comprehensive optometric care, specializing in eye exams, contact lens fittings, treating dry eye and allergies as well as screening for cataracts, glaucoma and macular degeneration. She also has experience working with ophthalmologists to assist in caring for patients for refractive surgery, cataract surgery and corneal transplants.

Vivian Manh, OD, MS

Dr. Manh is a UW clinical instructor in ophthalmology. She provides comprehensive pediatric eye care at Seattle Children's Hospital.

EDUCATION

BSc - University of Waterloo School of Optometry
OD - University of Waterloo School of Optometry
MS - Indiana University School of Optometry
Post-graduate - Southern California College of Optometry

PATIENT CARE PHILOSOPHY

Vision is a crucial aspect of a child's overall development. It is a privilege to be able to provide my young patients with clear and comfortable access to their visual environment and to help families maximize their children's potential for learning and growth.

SCOPE OF CARE

Dr. Manh's clinical provides eye care for the pediatric and special needs populations and diagnosis and management of strabismus/amblyopia and non-strabismic binocular vision disorders.

Nancy Ross Anibarro, OD

Dr. Ross is a UW teaching associate and primary optometrist for the refractive Surgery Center at UW Medical Center.

EDUCATION

BA - Exercise and Sport Science, Minor in Chemistry - Western Washington University
OD - Pacific University College of Optometry
Post-graduate - Westside VAMC, Chicago, IL
Post-graduate - Hines VAMC Blind Rehabilitation Center, Hines, IL

PATIENT CARE PHILOSOPHY

Compassion and individual attention are critical in providing patients with highest standards of comprehensive eye care. Dr. Ross believes in giving patients a thorough explanation and providing them with the tools to be proactive in their care. She feels fortunate to work with an outstanding team at the UW that synchronizes care to provide patients with a seamless experience.

SCOPE OF CARE

Comprehensive primary eye care which includes annual eye examinations, baseline dilated fundus exam for patients diagnosed with systemic diseases and evaluation, treatment or appropriate referrals for red eye emergencies.

She also provides refractive surgery consultations, comprehensive pre-operative eye exams for LASEK, PRK and cataract patients, post-operative follow-up and general eye exams for past refractive surgery patients.

OPTOMETRIC SERVICES *continued*

James Toop, OD, PhD

Dr. Toop is a primary care optometrist and UW teaching associate with an emphasis on contact lens fitting. He sees patients of all ages.

EDUCATION

BSc, University of Edinburgh, Scotland

PhD - University of Edinburgh, Scotland

OD - New England College of Optometry

Fellowship - Muscle Biochemistry, University of California

PATIENT CARE PHILOSOPHY

All patients receive the full benefit of care without discrimination. Patients will be treated courteously and will be seen in a timely fashion if possible.

SCOPE OF CARE

Complete eye exams, with referral to appropriate specialists as needed; and fitting of soft and hard contact lenses for cosmetic or therapeutic reasons.

PEDIATRIC & STRABISMUS

Francine M. Baran, MD

Dr. Baran is a UW clinical associate professor of ophthalmology and a member of the surgical faculty team at Seattle Children's.

PATIENT CARE PHILOSOPHY

Her daily commitment is to providing children a comfortable and friendly environment so they feel at ease during eye exams. She understands that an unfamiliar environment can be intimidating; so she tries to make the whole experience as much fun as possible, which makes each day an exciting opportunity to help young people. Good vision is essential for proper physical and emotional development, as well as educational progress in growing children. She aims to empower her adult patients to understand their medical condition and take an active role in their care. She also believes that listening is the first step in treating a patient's medical condition.

EDUCATION

BA - Washington University

MD - Hahnemann School of Medicine

Residency - State University New York

Pediatric Fellowship - Children's National Medical Center

SCOPE OF CARE

Pediatric Ophthalmology, Strabismus.

Michelle T. Cabrera, MD

Dr. Cabrera is a UW assistant professor of ophthalmology and a physician at Seattle Children's. Dr. Cabrera is the founder and director of the Lanzhou Chinese ROP Training Program- a program to train and collaborate with Chinese ophthalmologists in the screening and treatment of retinopathy of prematurity, the number one cause of childhood blindness in China. Dr. Cabrera is also the principal investigator for a study involving retinal optical coherence tomography in premature infants.

EDUCATION

BS - Stanford University

MD - University of California at San Francisco

Intern - Internal Medicine, Mt. Sinai School of Medicine

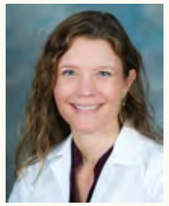
Residency - University of California at San Francisco

PATIENT CARE PHILOSOPHY

Dr. Cabrera believes that a child's ocular health depends on establishing a good relationship with both the family and the patient and in open communication and discussion with everyone involved.

SCOPE OF CARE

Dr. Cabrera's clinical interests include pediatric strabismus, amblyopia, nasolacrimal disorders, pediatric cataracts, pediatric glaucoma, retinopathy of prematurity, ptosis, and systemic diseases that affect the eyes.



Erin P. Herlihy, MD

Dr. Herlihy is a UW assistant professor of ophthalmology and a physician at Seattle Children's.

EDUCATION

BS - University of Notre Dame, Notre Dame

MD - Loyola University Stritch School of Medicine

Residency - University of Washington

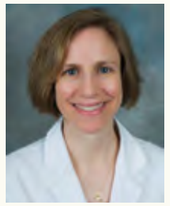
Fellowship – Pediatric Ophthalmology and Strabismus, Kellogg Eye Center

PATIENT CARE PHILOSOPHY

A fun and nonthreatening environment is essential in engaging children and their families to participate in their eye care. Children are not just little adults.

SCOPE OF CARE

Pediatric and adult strabismus, amblyopia, nasolacrimal disorders, refractive error in children, pediatric cataracts, pediatric glaucoma and systemic diseases that affect the eyes.



Kristina Tarczy-Hornoch, MD, D. Phil

Dr. Tarczy-Hornoch is an associate professor of ophthalmology at the University of Washington and associate chief of ophthalmology at Seattle Children's Hospital. Her clinical and research interests focus on disorders that affect visual development in children.

EDUCATION

BA - University of Oxford, Oxford, U.K.

MD - University of California, San Francisco, School of Medicine

D. Phil - Neurophysiology - University of Oxford, Oxford, U.K.

MS - Clinical and Biomedical Investigation - University of Southern California

Internal Medicine Internship - University of Washington, School of Medicine

Residency - Doheny Eye Institute, University of Southern California, Keck School of Medicine

Fellowship – Wilmer Ophthalmological

PATIENT CARE PHILOSOPHY

Caring for children means caring for the whole family. Parents will do everything possible to help their children, but can sometimes feel overwhelmed by the decisions they face, especially when there isn't just one right answer. One of the most rewarding experiences for a physician is being able to teach families and empower them to make informed decisions about a child's care.

Avery H. Weiss, MD

Dr. Avery H. Weiss is professor in the division of ophthalmology at Seattle Children's Hospital and at the University of Washington School of Medicine.

EDUCATION

BS - University of Florida

MD - University of Miami

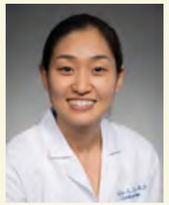
Residency - Washington University

Fellowship - Washington University; Pediatric Ophthalmology, Children's Hospital National Medical Center

SCOPE OF CARE

Dr. Weiss' clinical interests include visual disorders, eye movement abnormalities, cataract and glaucoma, retinoblastoma and orbital tumors, ocular malformations and ophthalmological manifestations of systemic diseases.

UVEITIS AND OCULAR INFLAMMATION



Cecilia Lee, MD

Dr. Lee is a UW acting instructor of ophthalmology. She is a clinician scientist and her time is divided between seeing patients with retinal conditions, performing cataract extractions, teaching, and pursuing her research in medical retina and uveitis.

EDUCATION

BS - Emory University
MD - Emory University School of Medicine
Internship - Transitional, Emory University
Residency - Ophthalmology, Emory University
Fellowship - Uveitis, Washington University in St. Louis; Medical Retina, Moorfields Eye Hospital

PATIENT CARE PHILOSOPHY

I love participating in my patients' healthcare by providing personalized, up-to-date medical care. I enjoy translating next generation research tools in medical retina to the clinic and providing deeper insights in each patient's care.

SCOPE OF CARE

Dr. Lee offers medical treatments for vitreoretinal diseases and performs cataract surgeries. She enjoys being actively involved in clinical research and teaching residents. She is dedicated to educating her patients with the most current information and offering diverse treatment options.

Thellea Leveque, MD, MPH

Dr. Leveque is a clinical associate professor at the University of Washington. She is a comprehensive ophthalmologist and uveitis specialist at the UW Eye Institute at Harborview Medical Center. Dr. Leveque sees patients in comprehensive ophthalmology and uveitis.

EDUCATION

BA - Amherst College
MD - Duke University School of Medicine
M.P.H. - University of North Carolina
Residency - University of Michigan

PATIENT CARE PHILOSOPHY

Patient education and participation in care is vital to eye health. "I will do everything I can to explain your eye condition in a way that makes sense to you. There is no such thing as a dumb question!"

SCOPE OF CARE

All straightforward and complex medical conditions of the eye, including dry eye and related diseases, glaucoma, mild to moderate macular degeneration, ocular health in systemic disease (including diabetes), and trauma.

Kathryn L. Pepple, MD, PhD

Dr. Pepple is an acting assistant professor of ophthalmology. Dr. Pepple's laboratory is interested in understanding the pathogenesis of ocular inflammation, and developing new therapies to treat patients with uveitis. Her lab is also interested in novel applications of advanced imaging modalities such as optical coherence tomography (OCT) and IVIS in clinical and pre-clinical studies of uveitis.

EDUCATION

BS - Microbiolology, University of Oklahoma
MD - Baylor College of Medicine
PhD - Baylor College of Medicine
Internship - The Methodist Hospital
Residency - Ophthalmology, Duke University
Fellowships - Medical Retina, Duke University; Uveitis, University of Washington

PATIENT CARE PHILOSOPHY

My goal is to prevent vision loss and blindness by providing high quality clinical care and developing new treatments for patients with uveitis.

SCOPE OF CARE

Dr. Pepple specializes in uveitis, including iritis, pars planitis, retinitis, choroiditis and scleritis, and medical retinal disease including age related macular degeneration, diabetic retinopathy, and retinal vascular diseases.

Russell N. Van Gelder, MD, PhD

Dr. Van Gelder is the UW Boyd K. Bucey Professor and chair of the Department of Ophthalmology and Director of the UW Medicine Eye Institute. Dr. Van Gelder is a clinician-scientist. His primary clinical interest is in ocular inflammatory disease (uveitis and related conditions). He also cares for patients with medical retinal diseases.

EDUCATION

BS - Stanford University
MD - Stanford University School of Medicine
PhD - Stanford University Hospital and Veterans Administration Hospital
Residency - Barnes Hospital, Washington University Medical School
Fellowship - Uveitis and Medical Retina, Barnes Retina Institute

PATIENT CARE PHILOSOPHY

Dr. Van Gelder practices evidence-based medicine supported by over a decade of practice in uveitis. He gives the same thorough, personal attention to each patient. He involves the entire eye care team in patient care, and he examines each patient and discusses his or her care with patience and thoroughness. Dr. Van Gelder involves patients in their care decisions and takes each patient's individual philosophy and preference into account when deciding on a treatment course.

SCOPE OF CARE

Dr. Van Gelder treats ocular inflammatory and medical retinal disease primarily through medical treatments, as well as in-office procedures.

EDUCATION

PREPARING THE NEXT GENERATION OF PHYSICIANS AND VISION SCIENTISTS

The University of Washington has trained more than 150 eye physicians and surgeons since 1966. Our award-winning faculty members, modern teaching facilities, and volume of pathology make the University of Washington an ideal learning environment

RESIDENT AND FELLOW PHYSICIANS

Residency Program

The Ophthalmology Residency is designed to develop clinicians well trained in medical and surgical ophthalmology prepared to excel as community practitioners, or to follow a career track that will lead them to academic medicine or biomedical research. With our outstanding faculty and state of the art facilities, our residents are exposed to a wide variety of pathology from the greater WWAMI region (Washington, Wyoming, Alaska, Montana, Idaho).

Fellowships

Ophthalmic Plastic & Reconstructive Surgery Fellowship
This competitive ASOPRS-approved two-year training program is designed to provide exposure to all aspects of ophthalmic plastic surgery.

Retina Fellowship
This AUPO-approved two-year training program is designed to provide exposure to all aspects of medical retina disease, vitreoretinal surgery, uveitis, and ocular tumors

Pediatric Ophthalmology Fellowship
Seattle Children's Hospital and the University of Washington Department of Ophthalmology offers a one-year, comprehensive medical and surgical Pediatric Ophthalmology and Strabismus fellowship. This competitive training program is designed to provide exposure to all aspects of Pediatric Ophthalmologic and Adult Strabismic disease.

Uveitis and Ocular Inflammation Fellowship
The University of Washington Department of Ophthalmology offers a one- or two-year, comprehensive AUPO FCC (Association of University Professors of Ophthalmology Fellowship Compliance Committee) approved Uveitis and Ocular Inflammation Fellowship.

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But Know Not What
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ACADEMICS

Our faculty are drawn to the UW for its rich academic culture and its facility to translate the creative process into clinical practice. We thrive in discovery and innovation for the elevation Of suffering from eye disease.

SELECT RECENT PUBLICATIONS

Lee CS, Lee AY, Sim DA, Keane PA, Mehta H, Zarranz-Ventura J, Fruttiger M, Egan CA, Tufail A. **Reevaluating the definition of intraretinal microvascular abnormalities and neovascularization elsewhere in diabetic retinopathy using optical coherence tomography and fluorescein angiography.** Am J Ophthalmol. 2015 Jan;159(1):101,10.e1. Keyword(s): Diabetic Retinopathy; Imaging

Manh V, Chen AM, Tarczy-Hornoch K, Cotter SA, Candy TR. **Accommodative performance of children with unilateral amblyopia.** Invest Ophthalmol Vis Sci. 2015 Jan 27;56(2):1193-207. Keyword(s): Strabismus/Amblyopia/Eye Movement Disorders

Smith EL,3rd, Hung LF, Arumugam B, Holden BA, Neitz M, Neitz J. **Effects of long-wavelength lighting on refractive development in infant rhesus monkeys.** Invest Ophthalmol Vis Sci. 2015 Oct 1;56(11):6490-500. Keyword(s): Myopia/Presbyopia

Vajzovic L, Rothman AL, Tran-Viet D, Cabrera MT, Freedman SF, Toth CA. **Delay in retinal photoreceptor development in very preterm compared to term infants.** Invest Ophthalmol Vis Sci. 2015 Jan 13;56(2):908-13. Keyword(s): Retina/Retinal Diseases

Weiss AH, Kelly JP, Hopper RA, Phillips JO. **Crouzon syndrome: Relationship of eye movements to pattern strabismus.** Invest Ophthalmol Vis Sci. 2015 Jul;56(8):4394-402. Keyword(s): Strabismus/Amblyopia/Eye Movement Disorders

Willoughby CL, Fleuriet J, Walton MM, Mustari MJ, McLoon LK. **Adaptability of the immature ocular motor control system: Unilateral IGF-1 medial rectus treatment.** Invest Ophthalmol Vis Sci. 2015 Jun;56(6):3484-96. Keyword(s): Strabismus/Amblyopia/Eye Movement Disorders

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Lee AY, Akileswaran L, Tibbetts MD, Garg SJ, Van Gelder RN. **Identification of torque teno virus in culture-negative endophthalmitis by representational deep DNA sequencing.** Ophthalmology. 2015 Mar;122(3):524-30. Keyword(s): Gene Research/Therapy

Van Gelder RN, Margolis TP. **Ebola and the ophthalmologist.** Ophthalmology. 2015 Nov;122(11):2152-4. Keyword(s): Uveitis/Infectious Diseases

Bondalapati S, Milam RW,Jr, Ulrich JN, Cabrera MT. **The characteristics and short-term refractive error outcomes of cystoid macular edema in premature neonates as detected by spectral-domain optical coherence tomography.** Ophthalmic Surg Lasers Imaging Retina. 2015 Sep 1;46(8):806-12. Keyword(s): Imaging

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Buhr ED, Yue WW, Ren X, Jiang Z, Liao HW, Mei X, Vemaraju S, Nguyen MT, Reed RR, Lang RA, Yau KW, Van Gelder RN. **Neuropsin (OPN5)-mediated photoentrainment of local circadian oscillators in mammalian retina and cornea.** Proc Natl Acad Sci U S A. 2015 Oct 20;112(42):13093-8. Keyword(s): Cornea; Retina/Retinal Diseases

Chang SH, Yousefi S, Qin J, Tarbet K, Dziennis S, Wang R, Chappell MC. **External compression versus intravascular injection: A mechanistic animal model of filler-induced tissue ischemia.** Ophthal Plast Reconstr Surg. 2015 Jun 26. Keyword(s): Other (Plastic and Reconstructive Surgery)

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Hurley JB, Chao JR. **It's never too late to save a photoreceptor.** J Clin Invest. 2015 Sep 1;125(9):3424-6. Keyword(s): Gene Research/Therapy

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Select Recent Publications *continued*

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Sexton TJ, Bleckert A, Turner MH, Van Gelder RN. **Type I intrinsically photosensitive retinal ganglion cells of early post-natal development correspond to the M4 subtype.** Neural Dev. 2015 Jun 21;10:17,015-0042-x. Keyword(s): Retina/Reginal Diseases

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Sun YC, Li P, Johnstone M, Wang RK, Shen TT. **Pulsatile motion of trabecular meshwork in a patient with iris cyst by phase-sensitive optical coherence tomography: A case report.** Quant Imaging Med Surg. 2015 Feb;5(1):171-3. Keyword(s): Imaging

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Van Gelder RN. **Photochemical approaches to vision restoration.** Vision Res. 2015 Jun;111(Pt B):134-41. Keyword(s): AMD; Retina/Retinal Diseases

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Van Gelder RN, Kaur K. **Vision science: Can rhodopsin cure blindness?** Curr Biol. 2015 Aug 17;25(16):R713-5. Keyword(s): Gene Research/Therapy

Walton MM, Mustari MJ. **Abnormal tuning of saccade-related cells in pontine reticular formation of strabismic monkeys.** J Neurophysiol. 2015 Aug;114(2):857-68. Keyword(s): Strabismus/Amblyopia/Eye Movement Disorders

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Yeh OL, Francis CE. **Ipilimumab-associated bilateral optic neuropathy.** J Neuroophthalmol. 2015 Jun;35(2):144-7. Keyword(s): Optic Neuropathy

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Zhang Q, Neitz M, Neitz J, Wang RK. **Geographic mapping of choroidal thickness in myopic eyes using 1050-nm spectral domain optical coherence tomography.** J Innov Opt Health Sci. 2015 Jul 1;8(4):1550012. Keyword(s): Imaging; Myopia/Presbyopia

Bojikian KD, Stein AL, Slabaugh MA, Chen PP**. Incidence and risk factors for traumatic intraocular pressure elevation and traumatic glaucoma after open-globe injury.** Eye (Lond). 2015 Sep 18. Keyword(s): Glaucoma

Butt T, Lee A, Lee C, Tufail A, UK AMD EMR Study Group. **The cost-effectiveness of initiating ranibizumab therapy in eyes with neovascular AMD with good vision: An economic model using real-world outcomes.** BMJ Open. 2015 May 5;5(5):e006535,2014-006535. Keyword(s): AMD

Choi WJ, Pepple KL, Zhi Z, Wang RK. **Optical coherence tomography based microangiography for quantitative monitoring of structural and vascular changes in a rat model of acute uveitis in vivo: A preliminary study.** J Biomed Opt. 2015 Jan;20(1):016015. Keyword(s): Imaging; Uveitis

Lee AY, Lee CS, Butt T, Xing W, Johnston RL, Chakravarthy U, Egan C, Akerele T, McKibbin M, Downey L, Natha S, Bailey C, Khan R, Antcliff R, Varma A, Kumar V, Tsaloumas M, Mandal K, Liew G, Keane PA, Sim D, Bunce C, Tufail A, UK AMD EMR Users Group. **UK AMD EMR USERS GROUP REPORT V: Benefits of initiating ranibizumab therapy for neovascular AMD in eyes with vision better than 6/12.** Br J Ophthalmol. 2015 Aug;99(8):1045-50. Keyword(s): AMD

Our faculty are drawn to the UW for its rich academic culture and its facility to translate the creative process into clinical practice. We thrive in discovery and innovation for the elevation of suffering from eye disease.

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- Vision Research Innovation Awards

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