InSight 2024

Community Report

UW Medicine

DEPARTMENT OF OPHTHALMOLOGY

UW Medicine Department of Ophthalmology faculty at their January 2025 annual retreat.

2024 IN ROUND NUMBERS

5,000
PATIENT SURGERIES ACROSS ALL SITES

100,000
PATIENT VISITS ACROSS ALL SITES

95%
PATIENT SATISFACTION 9/10 OR 10/10

$25 MILLION
TOTAL RESEARCH FUNDING PUBLIC AND PRIVATE

20
RESIDENTS

5
CLINICAL FELLOWS

$5.7 MILLION
CHARITY CARE IN PAST 15 YEARS

112
FACULTY PUBLICATIONS

48
FACULTY MEMBERS

650
APPLICANTS FOR FIVE RESIDENCY POSITIONS, ALL MATCHED

Message from the Chair, Russ Van Gelder, MD, PhD

On behalf of the Department of Ophthalmology at UW Medicine, it is my pleasure to present our Community Report for 2024.

The department has continued to pursue our singular mission: to alleviate suffering from eye disease. We continue to do this through our robust research programs, outstanding patient care and educational programs to train the next generation of physicians.

This year has marked many notable anniversaries – 60 years as a department of the UW School of Medicine, 15 years for the Eye Institute, our 15th Gained in Translation research symposium, and the fifth anniversary of the Karalis Johnson Retina Center. The KJRC has been a remarkable success in advancing research and serving patients from throughout the region.

Our research has grown to its all-time greatest extent and is among the most vibrant in the nation. Our vision scientists are committed to improving diagnosis, treatment, and ultimately finding cures for diseases of the eye and visual system. Collectively, the department published more than 100 papers during the 2023-24 academic year. Our department is third in the nation in NIH funding among ophthalmology departments, and the University of Washington as a whole is second for National Eye Institute funding.

We are providing more care to the community than ever before, and our patients remain highly satisfied with their care. The department has eight major sites of practice: the UW Medicine Eye Institute at Harborview; the Karalis Johnson Retina Center at South Lake Union, the Harborview Medical Center 4W Clinic (which includes our consult and trauma services); UW Medical Center-Montlake Eye Center; VA Puget Sound Health Care System (Seattle and American Lake); Seattle Children's; UW Medicine Primary Care clinics in Ravenna and Shoreline and the Eyes on James optical shop. Our faculty and trainees provided over 100,000 patient visits and performed over 5,000 surgeries.

We serve as a major referral center, seeing patients from the five-state WWAMI (Washington, Wyoming, Alaska, Montana, Idaho) region. We continue to provide many services rare in the community, including managing eye cancer (ocular oncology), uveitis, and medical and hereditary retinal disease.

We are training some of the best young ophthalmologists in the nation. We currently train 20 residents, five fellows, and scores of medical students annually. We are adding new fellowships in glaucoma and neuro-ophthalmology. Our residency training program remains one of the most competitive in the country.

We thrive in partnership with our generous community. Our philanthropic partners' generosity accelerates our ability to conduct cutting-edge research, provide excellent patient care, and train the next generation of ophthalmologists. Endowments and individual gifts are gratefully acknowledged in this report.

On behalf of our whole department, I hope you enjoy reading about some of our accomplishments this past year.

Russell N. Van Gelder, MD, PhD
Boyd K. Bucey Memorial Professor and Chair
Department of Ophthalmology, University of Washington
Director, Roger and Angie Karalis Johnson Retina Center
Director, UW Vision Science Center

Fortenbach lab investigating the therapeutic potential for photoswitches to restore vision

Age-related macular degeneration and retinitis pigmentosa are degenerative diseases affecting millions of people worldwide. They cause progressive loss of the outer retina, characterized by the death of rod and cone photoreceptors. This leads to declining vision and, in some cases, blindness.

While treatments to prevent degeneration remain under investigation, therapies to restore vision have begun to emerge, including synthetic small molecules known as photoswitches.

Assistant Professor Chris Fortenbach, MD, PhD.

Assistant Professor Chris Fortenbach, MD, PhD, is investigating the therapeutic potential for photoswitches to restore vision in degenerated retinas in his lab at the Vision Science Center at South Lake Union. These light-sensitive small molecules bind to the degenerating retina and confer new light sensitivity to surviving retinal cells. Several generations of these molecules have been developed with differing cell target specificity and sensitivity.

In contrast to other therapies requiring surgery, photoswitches can be delivered via intravitreal injection, a procedure performed over 20 million times per year globally. Most recently, promising phase 1 clinical trial data have demonstrated vision restoration in several human subjects.

The Fortenbach Lab is researching the mechanisms by which photoswitches restore light sensitivity and methods to improve visual outcomes among treated individuals. The lab uses a combination of electrophysiology methods, including whole-cell and multielectrode array recordings, in conjunction with machine learning to assess the ability of photoswitches to encode visual information. Overall, the lab's goal is to help develop a medication capable of restoring sight and improving the quality of life for patients with vision loss.

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Fortenbach lab

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Dr. Fortenbach joined the faculty in August 2023 after completing his ophthalmology residency and vitreoretinal surgery fellowship at the University of Iowa Hospitals and Clinics. His clinical practice is at the Karalis Johnson Retina Center and the Veterans Affairs Puget Sound Healthcare System.

Dr. Fortenbach grew up in Northern California, where he attended the University of California, Davis for his undergraduate education. He stayed on for the MD/PhD program, where he earned his PhD in Biochemistry, Molecular, Cellular, and Developmental Biology, studying how retinal neurons convey the presence of light.

"Vision science is unique in that we can trace it from basic scientific principles to human perception," Dr. Fortenbach said. "This understanding means that when things go awry, we have a solid foundation in science from which to build new treatments of ophthalmic disease."

Dr. Fortenbach in his lab at the Vision Science Center.

The Chao Lab

Jennifer Chao, MD, PhD
Gordon and Joan Bergy Professor
Vice Chair, Research

There are currently no effective treatments to prevent vision loss in most patients with inherited retinal degenerations (IRDs) or dry age related macular degeneration (AMD).

The Chao Lab is working to understand the mechanisms of retinal degenerative diseases and identify potential therapeutic targets for treatment. In pursuit of this goal, the Chao lab and their collaborators have taken on three synergistic approaches: (1) identify mechanisms of disease that contribute to the initiation and progression of macular degenerative diseases; (2) utilize patient-derived stem cells to develop more sophisticated and physiologically relevant models of retinal diseases; and (3) conduct imaging and interventional clinical trials of retinal degeneration patients to determine the effectiveness of novel therapeutics.

Jennifer Chao, MD, PhD is Vice Chair for Research.

Flagship AI-ready dataset released in type 2 diabetes study

UW Ophthalmology researchers **Dr. Aaron Lee**, Dan and Irene Hunter Professor of Ophthalmology and **Dr. Cecilia Lee**, Professor and Klorfine Family Chair have released the flagship dataset from an ambitious study of biomarkers and environmental factors that might influence the development of type 2 diabetes. Because the study participants include people with no diabetes and others with various stages of the condition, the early findings hint at a tapestry of information distinct from previous research.

Cecilia Lee, MD, MS and Aaron Lee, MD, MSCI.

For instance, data from a customized environmental sensor in participants' homes show a clear association between disease state and exposure to tiny particulates of pollution. The collected data also includes survey responses, depression scales, eye-imaging scans and traditional measures of glucose and other biologic variables.

All of these data are intended to be mined by artificial intelligence for novel insights about risks, preventive measures, and pathways between disease and health.

"We see data supporting heterogeneity among type 2 diabetes patients — that people aren't all dealing with the same thing. And because we're getting such large, granular datasets, researchers will be able to explore this deeply," said Dr. Cecilia Lee.

She expressed excitement at the quality of the collected data, which represent 1,067 people, just 25% of the study's total expected enrollees.

Cecilia Lee is program director of AI-READI (Artificial Intelligence Ready and Equitable Atlas for Diabetes Insights). The National Institutes of Health-supported initiative aims to collect and share AI-ready data for scientists worldwide to analyze for new clues about health and disease.

The initial data release is highlighted in a paper published in the journal Nature Metabolism. The authors restated their aim to gather health information from a more racially and ethnically diverse population than has been measured previously, and to make the resulting data ready, technically and ethically, for AI mining.

"This process of discovery has been invigorating," said Dr. Aaron Lee, the project's principal investigator. "We're a consortium of seven institutions and multidisciplinary teams that had not worked together before. But we have shared goals of drawing on unbiased data and protecting the security of that data as we make it accessible to colleagues everywhere."

At study sites in Seattle, San Diego, and Birmingham, Alabama, recruiters are collectively enrolling 4,000 participants, with inclusion criteria promoting balance: By collecting more deeply characterizing data from a lot of people, he added, the researchers hope to create pseudo health histories of how a person might progress from disease to full health and from full health to disease.

The Manookin Lab

Michael Manookin, PhD
Associate Professor

The Manookin lab is investigating the structure and function of neural circuits within the retina and developing techniques for treating blindness.

Many blinding diseases, such as retinitis pigmentosa, cause death of the rods and cones, but spare other cell types within the retina. Thus, many techniques for restoring visual function following blindness are based on the premise that other cells within the retina remain viable and capable of performing their various roles in visual processing. There are more than 80 different neuronal types in the human retina and these form the components of the specialized circuits that transform the signals from photoreceptors into a neural code responsible for our perception of color, form, and motion, and thus visual experience. The

Associate Professor Michael Manookin, PhD

Manookin lab is investigating the function and connectivity of neural circuits in the retina using a variety of techniques including electrophysiology, calcium imaging, and electron microscopy. This knowledge is being used to develop more effective techniques for restoring visual function following blindness.

The Mustafi Lab

Debarshi Mustafi, MD, PhD
Assistant Professor

The Mustafi lab is investigating the genetic basis of inherited retinal degeneration and potentials for therapeutic intervention to prevent progression of blindness.

Inherited retinal degenerations (IRDs) are a heterogeneous group of predominantly monogenic disorders that feature loss or dysfunction of photoreceptor cells as a primary or secondary event and have a prevalence of 1 in 2,000 to 1 in 3,000 individuals. In the pediatric population, IRDs are a major cause of visual impairment and can be one of the first presenting features of a syndromic condition.

Using isolated blood samples from affected IRD patients and their families, the lab is able to carry out genome sequencing to identify

Assistant Professor Debarshi Mustafi, MD, PhD

novel pathogenic variants of disease and reconstruct disease haplotypes, which has implications for the interpretation of disease risks in IRDs.

Harnessing the healing power of light

A daily dose of light is essential and beneficial to our health, according to **Research Associate Professor Ethan Buhr, PhD**.

Dr. Buhr said light affects us in nonvisual ways, and the fact that wavelengths of light are present outdoors but lacking in indoor lighting might impact health.

"Our eyes and bodies can detect light far beyond what our visual system sees. Our brains, skin and eye surface can all anticipate sunrise and sunset independently, using light triggers, because of a non-visual connection with our eyes," Dr. Buhr said. "This helps coordinate healing pathways so our skin and eye surface can repair wounds while minimizing UV damage, scarring, and infection."

Dr. Buhr said our behavior and cellular biology synchronize with the 24-hour light cycles produced by the daily rising and setting of the sun. This is achieved through non-visual photoreception or the activation of photoreceptors that function independently of vision. Circadian clocks are present in nearly every cell. To synchronize sleep-wake cycles, our retinas transmit light information to our brain's central circadian clock using rods, cones and intrinsically photoreceptive ganglion cells.

The Buhr Lab in the Vision Science Center at South Lake Union has identified additional unique photoreceptors, called opsins, that allow for the cells within the retina to synchronize with sunlight. These photoreceptors are separate from visual photoreceptors, like an extra eye for the retina itself. The synchronization of circadian clocks

Research Associate Professor Ethan Buhr, PhD

within the retina contributes to the retina's response to photodamage and the long-term health of the tissue.

In future studies, his laboratory will study how opsins' input to the brain controls these seasonal changes and how this influences the rhythms of our internal organs.

Outside of the retina, the Buhr Lab is also studying the role of non-visual photoreceptors in other areas exposed directly to light, such as the cornea and skin. Violet-light-sensitive photoreceptor cells are induced in response to injury. Once active, these cells activate pathways related to the synchronization of wound-healing mechanisms. An important next step is understanding how the signal is transmitted among the cells.

The Neitz Lab

Maureen Neitz, PhD
Professor, Ray Hill Chair

Jay Neitz, PhD
Bishop Foundation Professor

The Neitz lab is 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. The Neitz lab is also developing treatments for myopia, the most common vision problem globally. 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.

Professor and Ray Hill Chair Maureen Neitz, PhD

The Pepple Lab

Kathryn Pepple, MD, PhD
Associate Professor

The Pepple Lab is investigating the role of the innate immune system in ocular inflammation and studying new anti-inflammatory treatments for patients with uveitis.

Ocular inflammation, or uveitis, is potentially blinding disease that can affect people of all ages. Using cutting edge molecular methods, including multiplex cytokine analysis, optical coherence tomography angiography, in vivo bioluminescence imaging, and multicolor flow cytometry, the Pepple lab is studying animal models of uveitis to determine the key mediators of ocular inflammation. The lab is also testing compounds that target these key mediators to find promising new therapies for patients.

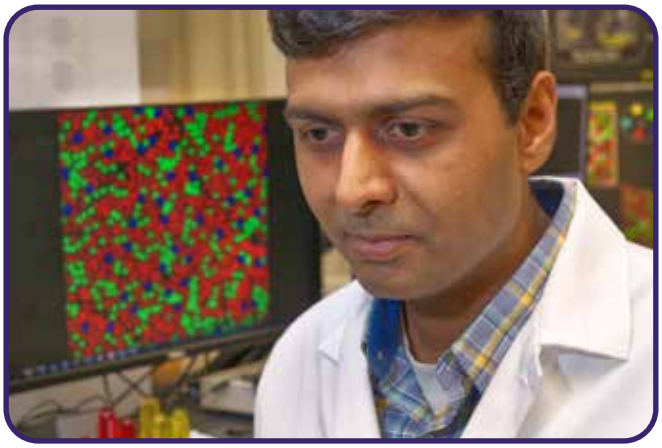
Associate Professor Kathryn Pepple, MD, PhD

The Sabesan Lab

Ram Sabesan, PhD
George and Martina Kren Associate Professor

The Sabesan lab investigates the functional mechanisms by which photoreceptors and their ensuing neural circuits mediate the most fundamental aspects of vision and how these visual capacities are affected by retinal diseases. To this end, the Sabesan lab develops and uses novel cellular imaging tools which enable the visualization of the structure and function of living retinal cells at unprecedented spatial scales.

The backbone of the methods pursued by the lab is a technology called adaptive optics – the same tool used by astronomers to peer at small objects in space. Using adaptive optics, one can overcome the optical imperfections that exist in the human eye, converting the eyeball essentially into a microscope objective. By combining adaptive optics with other microscopy techniques, one obtains the ability to probe living cells in the retina of humans. This allows the probing of retinal cells in diseased human eyes at high resolution, thus serving as sensitive biomarkers for early disease diagnosis and monitoring of cellular events involved in disease progression.



George and Martina Kren Associate Professor Ram Sabesan, PhD

The Van Gelder Lab

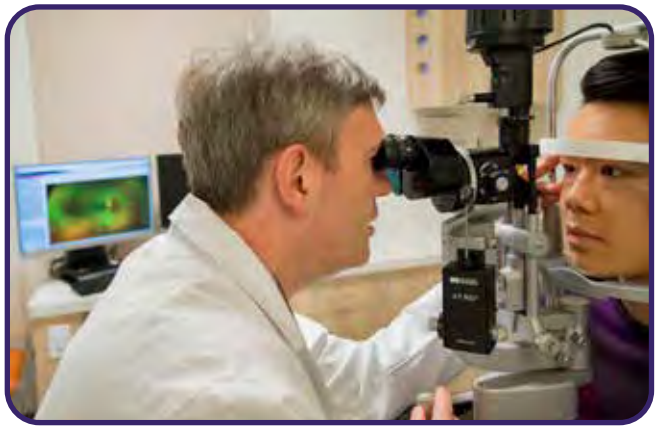
Russell Van Gelder, MD, PhD
Professor and Chair
Boyd Bucey Memorial Chair

The Van Gelder Lab has three main interests:

Molecular diagnostics of ocular infectious disease. Ocular infectious diseases, including microbial keratitis, conjunctivitis, and endophthalmitis, are significant causes of potentially blinding diseases. Most infectious organisms causing ocular disease originate in the ocular surface. Using cutting-edge molecular methods, including next generation sequencing, the Van Gelder lab is developing new techniques for rapid diagnosis of ocular infectious disease.

Vision restoration. Degenerative blinding diseases, including age-related macular degeneration, are caused by the death of rods and cones. The Van Gelder lab is investigating the therapeutic potential of synthetic small molecule photoswitches for restoring light sensitivity to degenerated retinas.

Non-visual photoreception. The Van Gelder lab is also working in collaboration with the Buhr laboratory to understand how light affects mammalian physiology outside the visual system. They are particularly interested in the 'non-visual opsins' including Opn3, Opn4, and Opn5 and their roles in circadian rhythm synchronization and wound healing.



Professor and Bucey Chair Russell Van Gelder,MD, PhD

Gained in Translation 15th annual symposium brings together vision scientists from UW, UBC, and OHSU

The 15th Annual Gained in Translation Symposium was held on Nov. 2, 2024 at UW Medicine South Lake Union in Seattle. This symposium brought together clinicians and vision scientists from the University of Washington, the University of British Columbia, and Oregon Health Sciences University. The event rotates between the sites each year.

Presentations focused on bridging the gap between disease treatment and the latest translational and basic research advances. Areas of synergy are identified for future collaboration between these institutions.

Dr. Sue Brockerhoff accepts the Helen Keller Award from Dr. Fred Minifie of the University Ballard Lions Club on behalf of the Lions Clubs of Washington, British Columbia and Idaho.

Sue Brockerhoff, PhD, UW Professor of Biochemistry and Adjunct Professor of Ophthalmology, was honored with the Helen Keller Award at the event. The Lions Clubs of Multiple District 19 gives the award annually to honor an individual at the host institution who has made significant contributions to vision science or ophthalmology care.

Dr. Brockerhoff's overall goal is to understand the biology of the cone photoreceptor and apply this knowledge to dissect the molecular basis of human retinal disease.

Speakers on translational research from the UW Department of Ophthalmology included Ricky Wang, PhD, George and Martina Kren Endowed Chair in Ophthalmology Research; Professor of Bioengineering and Ophthalmology; Chris Fortenbach, MD, PhD, Assistant Professor of Ophthalmology, and Ram Sabesan, Kren Associate Professor of Ophthalmology.

The keynote speaker was Marco A. Zarbin, MD, PhD, who has been Chair of the Institute of Ophthalmology and Visual Science at Rutgers-New Jersey Medical School for over 25 years. Dr. Zarbin specializes in vitreoretinal surgery and research.

FACULTY GRANTS FOR 2023-2024

Clinical trials and grants are translational tools between patient care and research. According to the Higher Education Research and Development (HERD) Survey, the UW is second in the nation in the federal funding it spends annually on research and development. The UW Medicine Department of Ophthalmology ranks third in the nation in total NIH grant funding.

NATIONAL INSTITUTES OF HEALTH (NIH)

Ethan Buhr, PhD
The mechanism of extra-visual circadian photoentrainment in mammals

Photoreceptor induction in wounded corneas

Jennifer Chao, MD, PhD
Metabolism of AMD iPSC-derived RPE

Metabolic dysfunction from ECM remodeling in diseases of human RPE

Aaron Lee, MD, MSCI
Bridge2AI: Uncovering the details of how human health is restored after disease, using Type 2 diabetes as a model.

Cecilia Lee, MD, MS
Aging eyes and aging brains in studying Alzheimer's disease: Modern ophthalmic data collection in the adult changes in thought (ACT) study

Michael Manookin, PhD
Function, diversity, and circuitry of parallel retinal ganglion cell pathways

Debarshi Mustafi, MD, PhD
The role of non-coding variants in Usher disease

Jay Neitz, PhD
Linking retinal circuits to perception

Maureen Neitz, PhD
CORE grant for vision research

Ram Sabesan, PhD
Optoretinography: All-optical measures of functional activity in the human retina

Russell Van Gelder, MD, PhD
Determinants of the periocular microbiome

RESEARCH TO PREVENT BLINDNESS

Russell Van Gelder, MD, PhD
Unrestricted Departmental Award

FOUNDATION FIGHTING BLINDNESS, INC.

Debarshi Mustafi, MD, PhD
Deciphering the missing heritability in inherited retinal diseases with targeted long-read genome sequencing

Kathryn Pepple, MD, PhD
Evaluating mitigation strategies for intravitreal viral vector-mediated inflammation across animal models

SINSKEY FOUNDATION

Jennifer Chao, MD, PhD
Disease Mechanisms of Age-Related Macular Degeneration

Kathryn Pepple, MD, PhD
Immunomodulation to improve success with gene therapy in the eye

Karine Duarte Bojikian, MD, PhD
Exploring the potential of phs-oct to monitor patients with glaucoma and assess efficacy of treatment

Cecilia S. Lee, MD, MS
The eyes as a window into your health: leveraging retinal imaging to detect Alzheimer's disease

Michael B. Manookin, PhD
Neural recording and stimulus design for early detection of retinal disease

Andrew W. Stacey, MD, MSc
Leveraging clinical images and artificial intelligence to improve eye cancer care

Russell Van Gelder, MD, PhD
Deep DNA Sequencing for rapid detection of ocular infections

OTHER GRANTS AND MAJOR SPONSORS

Jennifer Chao, MD, PhD (for Rayne Lim, PhD)
Brightfocus Foundation - Postdoctoral Fellowship Program
Factor H-like protein 1 insufficiency in Retinal Pigment Epithelium

Illinois No. 3 Foundation
Modeling Sorsby Fundus Dystrophy

Aaron Lee, MD, MSCI
The Lowy Medical Research Institute Limited
Application of machine learning to the MacTelproject for the UK Biobank and pathogen discovery

Zeiss
Advanced deep learning with ocular imaging
CDC - sub from National Opinion Research Center (NORC)
Improving and enhancing the US vision and eye health surveillance system

St. George's University of London and others
Prediction of complications of diabetes mellitus utilizing novel retinal image analysis, genetics, and linked electronic health records data

Cecilia Lee, MD, MS
Alzheimer's Drug Discovery Foundation (ADDF)
Retinal biomarkers in Alzheimer's disease

University of Alabama at Birmingham (NIA)
Functionally validated structural endpoints in early AMD

The Lowy Medical Research Institute Limited
A natural history observation and registry study of macular telangiectasia type 2 the MacTel study

Gates Ventures – sub from Trustees of Boston University
Maximizing interoperability across multiple data types

Raghu Mudumbai, MD
Stoke Therapeutics, Inc.
A prospective natural history study of patients with autosomal dominant optic atrophy

Viridian Therapeutics, Inc
A multiple ascending dose (MAD) safety and preliminary efficacy study of VRDN-001, a humanized monoclonal antibody directed against the IGF-1 receptor, in normal healthy volunteers (NHVs) and subjects with thyroid eye disease (TED)

A randomized, double-masked, placebo-controlled safety, tolerability, and efficacy study of VRDN-001, a humanized monoclonal antibody directed against the IGF-1 receptor, in participants with chronic thyroid eye disease (TED)

An open-label study for participants who are non-responders at the end of treatment assessment on the VRDN-001-101 and VRDN-001-301 pivotal studies

Debarshi Mustafi, MD, PhD
Alcon Research Institute
Targeted long-read sequencing to identify phased pathogenic variants in inherited retinal diseases pathogenic
Latham – Vision Research Innovation Award

Jay Neitz, PhD
University of North Carolina at Chapel Hill (NIH)
Neural mechanisms of colored light-driven analgesia

Maureen Neitz, PhD
Medical College of Wisconsin (NEI)
Assessing photoreceptor structure and function in normal and diseased retinae

Kathryn Pepple, MD, PhD
Institute for Arthritis Research
Efficacy of systemic administration of pentideX2-13 in the treatment of experimental uveitis

Kasra Rezaei, MD
Jaeb Center for Health Research
Diabetic retinopathy clinical research network

Ram Sabesan, PhD
DOD - sub from Berkeley
Probing, modeling & reprogramming visual perception at the level of individual photoreceptors

Andrew Stacey, MD
The Gerber Foundation
Rapid neonatal genetic diagnosis of retinoblastoma utilizing targeted long-read sequencing technology

AURA Biosciences, Inc
A Phase 3 randomized, masked, controlled trial to evaluate efficacy and safety of belzupcap sarotalocan (AU-011) treatment compared to sham control in subjects with primary indeterminate lesions or small choroidal melanoma

Jaeb Center for Health Research, Inc. (JCHR) (NIH)
A Randomized Clinical Trial Evaluating Intravitreal Faricimab (6.0 mg) Injections or Fluocinolone Acetonide (0.19 mg) Intravitreal Implants vs Observation for Prevention of Visual Acuity Loss due to Radiation Retinopathy (Protocol AL)

VISION SCIENCE RESEARCH FACULTY & ASSOCIATES

OPHTHALMOLOGY PRIMARY

Ethan Buhr, PhD
Research Associate Professor

Michelle Cabrera, MD
Professor

Jennifer Chao, MD, PhD
Gordon and Joan Bergy Professor

Chris Fortenbach, MD, PhD
Assistant Professor

Murray Johnstone, MD
Clinical Professor

James Kuchenbecher, PhD
Acting Assistant Professor

Aaron Lee, MD, MSc
C. Dan and Irene Hunter Endowed Professor

Cecilia Lee, MD, MS
Klorfine Family Endowed Chair

Mike Manookin, PhD
Associate Professor

Debarshi Mustafi, MD, PhD
Assistant Professor

Jay F. Neitz, PhD
Bishop Foundation Professor

Maureen E. Neitz, PhD
Ray H. Hill Endowed Chair

Vimal Pandiyan, PhD
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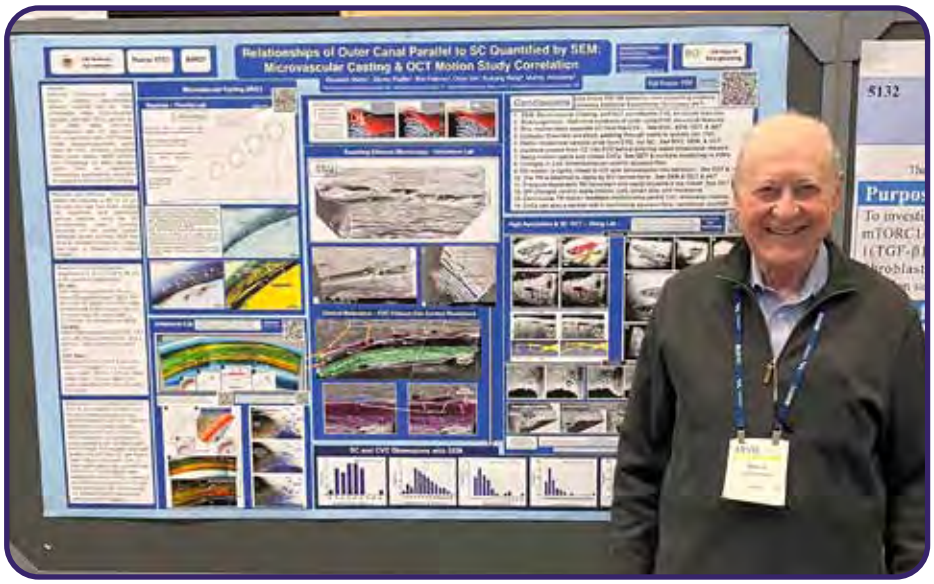
Kathryn Pepple, MD, PhD
Associate Professor

Ram Sabesan, PhD
George and Martina Kren Professor

Tueng T. Shen, MD, PhD
Graham and Brenda Siddall Endowed Chair



Clinical Professor Murray Johnstone, PhD, displays his research at the ARVO meeting in Seattle in May 2024.

Russell Van Gelder, MD, PhD
Boyd K. Bucey Memorial Chair

Ruikang "Ricky" Wang, PhD
George and Martina Kren Endowed Chair in Ophthalmology

Yue Wu, PhD
Acting Instructor

ADJUNCT

Susan E. Brockerhoff, PhD
Professor, Biochemistry

John I. Clark, PhD
Professor, Neurobiology and Biophysics

Ione Fine, PhD
Professor, Psychology

Jim Hurley, PhD
Professor, Biochemistry

Dirk Keene, MD, PhD
Professor, Laboratory Medicine and Pathology

Thomas A. Reh, PhD
Professor, Neurobiology and Biophysics

Frederick M. Rieke, PhD
Professor, Physiology and Biophysics

Kathryn Scherpelz, MD, PhD
Assistant Professor, Laboratory Medicine and Pathology

Rachel Wong, PhD
Professor, Neurobiology and Biophysics

EMERITI

Robert E. Kalina, MD
Professor Emeritus

Ann Milam, PhD
Professor Emerita

Michael Mustari, PhD
Research Professor Emeritus

John C. Saari, PhD
Professor Emeritus

Elementary principal returns to mountain biking after cornea injury treated at UW

Sean Silver was doing one of his favorite activities, riding his mountain bike on a woodsy trail in November 2022, when a low-hanging blackberry branch hit his right eye.

It hurt initially, but he didn't think much of it at the time. But four months later, the eye was still inflamed, appeared red, and was sensitive to light.

Silver, 56, an elementary school principal in Edmonds who has been in education for 26 years, went to his community eye care physician, who treated him and later sent him to another clinic.

The eye was steadily worsening.

"I looked like a zombie; I was in tremendous pain, couldn't drive, and had to stay in a dark room or wear two pairs of sunglasses if I went out," Silver said. "The doctor there said I needed to go to the emergency room at Harborview right away. That's when I knew it was serious."

Sean Silver is principal of Chase Lake Elementary School in the Edmonds School District.

The UW Department of Ophthalmology has a dedicated treatment room in the Harborview Medical Center emergency room, the region's only Level 1 trauma center. Silver was initially seen by the ophthalmology trauma and consult service in the ER before being referred to cornea specialist **Assistant Professor Miel Sundararajan, MD.**

"I was going through all these scenarios in the ER," Silver said. "But from the moment I met Dr. Sundararajan, I knew I was in good hands. Her kind and gentle nature, level of knowledge, and expertise were so comforting to me. I knew I would be OK whatever course of action she decided."

"Mr. Silver had developed a serious infection over the four months since the incident with the blackberry branch on his bike," Dr. Sundararajan said. "His eye care physician in the community did the right thing, sending him to the ER."

Dr. Sundararajan wasn't sure if the infection was fungal or bacterial because of the blackberry plant, but she soon was treating Silver with several types of eye drops.

Because his response to treatment was minimal, Dr. Sundararajan performed a surgical procedure to both biopsy the infectious material and clear it from the eye.

He was awake during the surgery and had to respond to commands of where to look, as the infection had penetrated through the cornea and into the eye.

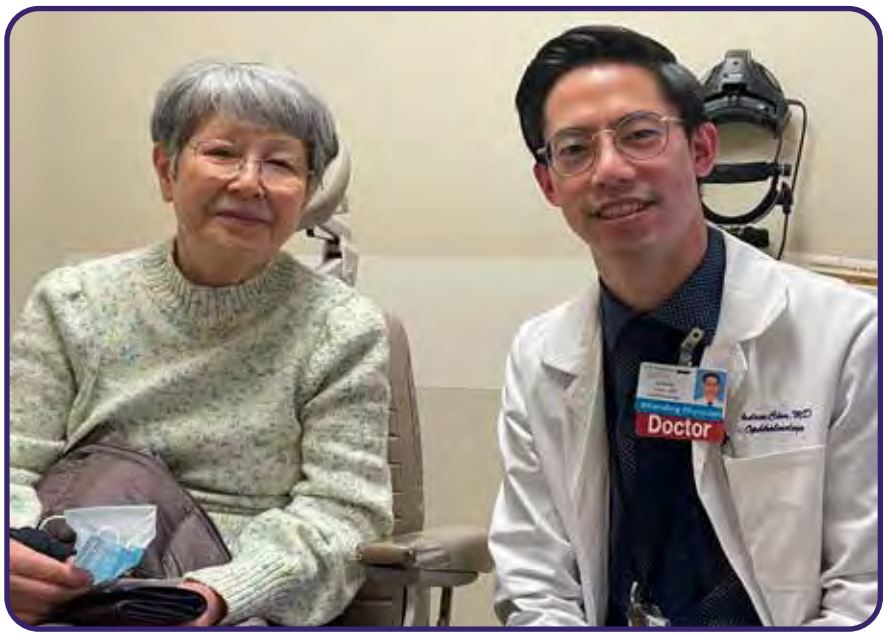
Silver was off work for three weeks from Chase Lake Elementary, where he has been principal for 11 years. After the surgery, he was treated with eye drops, including steroids, which needed to be tapered gradually over a year. He now rarely uses eye drops, and his vision is 20/25 with glasses.

More than two years later, Silver is back mountain biking and makes sure to wear eye protection.

"I owe Dr. Sundararajan a debt of gratitude; I appreciate the care I received from her and everyone at UW Ophthalmology," Silver said. "The state-of-the-art facility and diagnostic tools they have are reassuring when going through this. I can't say enough about how well she cared for me during one of the most challenging times in my life."

Glaucoma patient finds collaborative specialty care at UW Medicine Eye Institute

Glaucoma is the leading cause of irreversible blindness worldwide. It is a group of chronic eye conditions characterized by progressive damage to the optic nerve. Glaucoma has no symptoms in its early stages. Half of people with glaucoma do not know they have it. The damage often occurs in the setting of high intraocular pressure but can also occur at normal levels. The mainstay of treatment focuses on lowering intraocular pressure to preserve the optic nerve.



Dr. Andrew Chen with glaucoma patient Hiroko Ashizawa.

Hiroko Ashizawa, who recently turned 80, came to the UW Medicine Eye Institute in August 2024 after undergoing surgery for glaucoma with a community provider. However, she quickly required more and more drops soon after surgery to control her intraocular pressures. And with the addition of the multiple drops, she also developed severe irritation and side effects to the drops. “I had surgery earlier in 2024 that wasn’t successful, so I decided to come to the UW Medicine Eye Institute,” she said.

“Mrs. Ashizawa’s glaucoma was not well controlled, and her vision was worsening when I first saw her,” said **Andrew Chen, MD, Assistant Professor of Ophthalmology** and a glaucoma specialist. "Her case required an individualized surgical approach not usually performed in the community,"

While living in Los Angeles 50 years ago, Mrs. Ashizawa was the victim of an assault by a robber who beat her and left her with fractures in the bones around her right eye and nose. She had reconstructive plastic surgery at the time. She had no major eye problems for the next 30 years. However, 20 years ago, she began suffering from glaucoma and began receiving eye drops and laser treatments. She recently underwent another reconstructive surgery to remove infected hardware around the eye socket.

Because of her previous injury, Dr. Chen collaborated with Alexandra Van Brummen, MD, an Oculoplastic and Reconstructive Surgery fellow, for the surgery.

“Because of the breadth and depth of specialty care we provide at the Eye Institute at Harborview, our team can collaborate on complex cases and develop plans tailored to an individual’s unique circumstances such as in Mrs. Ashizawa’s scenario,” Dr. Chen said.

Dr. Chen and Dr. Van Brummen meticulously released scar tissue that had formed over the multiple decades of her initial trauma and subsequent surgeries. This created the space necessary for a new glaucoma drainage device to be safely implanted and function properly.

At this time, Mrs. Ashizawa is seeing well, and her eye pressure is well controlled.

“I’m so grateful for the treatment I’ve received here from Dr. Chen,” Mrs. Ashizawa said. "I don’t want to lose my eyesight. The doctors and the staff here at the Eye Institute are the best.”

Ocular oncology journey leads patient to become advocate for others

Jack Odell's nearly 12-year journey as a patient with uveal melanoma, a form of eye cancer, has been one of great courage and perseverance and led him to become an incredible advocate for patients with this disease.

It started with a simple eye exam in 2013, in which the physician noticed a shadow in the back of his eye. Once dilated, it was clear that the shadow was, in fact, a tumor. Jack was referred to the UW Medicine Eye Institute, where he was diagnosed with uveal (ocular) melanoma. Two later biopsies confirmed the diagnosis as a Type 2 aggressive eye cancer. His prognosis at the time was dire: two months to two years.

Ocular oncology is a specialty within ophthalmology that diagnoses and treats tumors on the surface and inside of the eye. Eye cancer can affect any structure in the eye and can be challenging to diagnose.

The UW Department of Ophthalmology is fortunate to have the expertise of Associate Professor Andrew Stacey, MD. He runs the only full-service ocular oncology unit in the WWAMI region. He sees patients at the UW Medicine Eye Institute at Harborview and the Ophthalmology Clinic at Seattle Children's.

After the tumor is diagnosed, treating it often requires a team from many medical specialties outside of Ophthalmology. Dr. Stacey teams with pediatricians, medical oncologists, radiation oncologists, and interventional radiologists at UW, Fred Hutch Cancer Center, and Seattle Children's.

"There are two main options when treating eye cancers such as ocular melanoma," Dr. Stacey said. "One is a surgical option, and the other is radiation. We have all modalities available at UW. For many patients, proton beam radiotherapy is used. It is a focused radiation beam that can treat the cancer precisely, limiting damage to the ocular structures."

In 2015, the UW created a first-of-its-kind proton beam and has now treated 400 ocular oncology patients. "Our innovations at UW have allowed modern proton beams to be applied to ocular tumors," he said.

Dr. Andrew Stacey with ocular oncology patient Jack Odell.

Overall, about seven in 10 patients can expect to live more than 10 years after diagnosis and treatment of ocular melanoma.

An architect and interior designer, Odell sought care at the University of California, San Francisco, as the UW didn't have an ocular oncologist then. He subsequently underwent proton beam therapy and chemotherapy and participated in clinical trials for targeted therapies for uveal melanoma.

He was grateful to have Dr. Stacey join the UW in 2016 to coordinate his treatment.

"It has been a journey," Odell said. "I had scans every three months for five-plus years and more than nine years on chemotherapy."

Odell and his husband loved to travel, but that was curtailed for a time because his affected left eye would bleed from the pressures of flying. Ultimately, after nearly a decade of treatment, his eye had to be removed in January 2023.

Mr. Odell joined A Cure in Sight, a volunteer organization dedicated to helping patients with eye cancer and their families. He served as vice president and patient advocate on the board for five years and spoke at many patient seminars. Together with his husband and A Cure in Sight, he has funded several independent ocular and uveal melanoma research projects.

UW MEDICINE OPHTHALMOLOGY PATIENT CARE FACULTY

COMPREHENSIVE OPHTHALMOLOGY

Anthony Chung, MD

Assistant Professor

EDUCATION

BS, University of Iowa
MD, University of Iowa
Residency: University of Iowa Hospitals and Clinics

Anne Ko, MD

Clinical Assistant Professor

EDUCATION

BS, Brown University
MD, Brown University
Residency: New York Eye and Ear Infirmary
Fellowship: Cornea and External Disease, USC/ Doheny Eye Institute

Whitney Lomazow, MD

Assistant Professor

EDUCATION

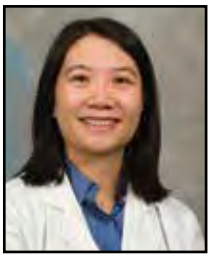
BS, Emory University
MD, Rutgers
Residency: Pediatrics, Children's Hospital of New York Presbyterian
Residency: Ophthalmology, Washington University
Fellowship: Cornea and External Disease, Univ. California, Irvine

Eric R.H. Duerr, MD

Assistant Professor

EDUCATION

BA, Case Western Reserve University
MD, University of Pittsburgh
Residency: Bascom Palmer Eye Institute, University of Miami
Fellowship: Glaucoma- Bascom Palmer Eye Institute, University of Miami



Deborah L. Lam, MD

Associate Professor
Chief of Eye Care Services, VA Puget Sound Health Care System

EDUCATION

BA, Northwestern University
MD, Northwestern University
Residency: University of Washington

Parisa Taravati, MD

Robert E. Kalina MD Associate Professor
Vice Chair, Education
Director, Residency Program
Chief of Service, UW Medical Center

EDUCATION

BS, University of Iowa
MD, University of Iowa
Residency: University of Iowa

Shu Feng, MD

Assistant Professor
Director, Medical Student Clerkship Program

EDUCATION

BS, University of Washington

MD, Oregon Health & Science University
Residency: Ophthalmology, University of Washington

Thellea Leveque, MD, MPH

Clinical Professor; Division Director, Comprehensive Ophthalmology

EDUCATION

BA, Amherst College
MD, Duke University
MPH, Clinical Leadership, University of North Carolina
Residency: University of Michigan
Fellowship: Uveitis, University of Washington

Jennifer T. Yu, MD, PhD

Clinical Associate Professor; Director, 4W Ophthalmology Clinic at Harborview; Director of Trauma and Consult Services at Harborview

EDUCATION

BS, University of Michigan
MD, Washington University
PhD, Molecular Oncology, Washington University
Residency: Washington University

CORNEA AND EXTERNAL DISEASE

Minh Nguyen, MD
Assistant Professor

EDUCATION
BS, UCLA
MD, Univ. of Wisconsin
Residency: University of Washington
Fellowship: Cornea, External Disease & Refractive Surgery, UCSF

Tueng T. Shen, MD, PhD
Professor; Graham and Brenda Siddall Chair In Cornea Research In Ophthalmology; Associate Dean for Medical Technology Innovation, UW School of Medicine

EDUCATION
BA, Wellesley College
PhD, Massachusetts Institute of Technology
MD, Harvard University
Residency: Massachusetts Eye & Ear Infirmary
Fellowship in Cornea, Refractive, and External Disease, Moran Eye Center, University of Utah

Miel Sundararajan, MD
Assistant Professor

EDUCATION
BS, Rice University
MD, Baylor College of Medicine
Residency: New York Eye & Ear Infirmary
Fellowship: Uveitis, UCSF; Cornea & External Disease, UCSF

GLAUCOMA

Andrew Chen, MD
Assistant Professor
Director, Glaucoma Fellowship

EDUCATION
BS, UCLA
MD, UCLA
Residency: University of Rochester
Fellowship: Glaucoma, Stein Eye Institute at UCLA

Philip P. Chen, MD
Professor
Grace E. Hill Endowed Chair
Vice Chair for Clinical Services

EDUCATION
BS, Stanford University
MD, Yale University School of Medicine
Residency: University of Southern California
Fellowship: Glaucoma, Bascom Palmer Eye Institute, University of Miami

Karine Duarte Bojikian, MD, PhD
Assistant Professor

EDUCATION
MD, Federal University of Sao Paulo
Ph.D., Federal University of Sao Paulo
Residency: University of Washington
Fellowship: Glaucoma, Casey Eye Institute & Devers Eye Institute, Portland, OR

Eric R.H. Duerr, MD
Assistant Professor

EDUCATION
BA, Case Western Reserve University
MD, University of Pittsburgh
Residency: Bascom Palmer Eye Institute at the University of Miami
Fellowship: Glaucoma- Bascom Palmer Eye Institute, University of Miami

Raghu Mudumbai, MD
Associate Professor; Division DIrector, Glaucoma

EDUCATION
BA, City University of New York
MD, City University of New York/State University of New York
Residency: State University of New York
Fellowship: Glaucoma, New York Eye and Ear Infirmary
Neuro Ophthalmology, Orbit, Oculoplastics, University of Minnesota

PATIENT CARE

MEDICAL AND SURGICAL RETINA

Jennifer Chao, MD, PhD

Gordon and Joan Bergy Professor
Vice Chair, Research

EDUCATION

BS. Stanford University
MD,, Yale University
PhD, Yale University
Residency: USC/Doheny Eye Institute
Fellowship, Vitreoretinal Surgery - USC/ Doheny Eye Institute

Aaron Lee, MD, MSc

C. Dan and Irene Hunter Professor

EDUCATION

BS, MD, Washington University
MS, Washington University
Residency, Washington University
Fellowships, Medical Retina, Moorfields Eye Hospital; Surgical Retina, UBC

Lisa Olmos de Koo, MD, MBA

Professor
Division Director, Retina
Director, Retina Fellowship

EDUCATION

AB, Harvard University
MD, Baylor College of Medicine
MBA, Rice University
Residency, Bascom Palmer Eye Institute, University of Miami
Fellowship, Vitreoretinal Surgery, Bascom Palmer Eye Institute, University of Miami

Yewlin Chee, MD

Associate Professor

EDUCATION

AB, Princeton University
MD, University of Pennsylvania
Residency, Harvard University
Fellowship, Vitreoretinal Surgery, Harvard University

Cecelia Lee, MD, MS

Professor
Klorfine Family Endowed Chair

EDUCATION

BS, Emory University
MD, Emory University
Residency, Emory University
Fellowships, Uveitis, Washington University
Medical Retina, Moorfields Eye Hospital

Kasra Rezaei, MD

Associate Professor

EDUCATION

MD, Azad University, Tehran, Iran
Residency, Vanderbilt Eye Institute, Vanderbilt University
Fellowship, Vitreoretinal Surgery, Associated Retina Consultants

Christopher Fortenbach, MD, PhD

Assistant Professor

EDUCATION

BS, UC Davis
MD, UC Davis
PhD, Biochemistry, Molecular, Cellular, and Developmental Biology, UC Davis
Residency, University of Iowa Hospitals and Clinics
Fellowship, Vitreoretinal Surgery, University of Iowa Hospitals and Clinics

Debarshi Mustafi, MD, PhD

Assistant Professor

EDUCATION

BS, University of Chicago
MD, Case Western Reserve University
Ph.D., Case Western Reserve University
Residency: University of Southern California
Fellowship: Vitreoretinal Surgery, University of Washington

Dr. Kasra Rezaei

NEURO-OPHTHALMOLOGY

Brian Chou, MD, MA
Assistant Professor

EDUCATION
BS, Northwestern University
MD, Northwestern University
MA, The Graduate School at Northwestern University
Residency, University of Washington
Fellowship, Neuro-O.phthalmology, Stein/Doheny Eye Institute at UCLA

Courtney Francis, MD
Associate Professor; Division Director, Neuro-Ophthalmology; Medical Director, UW Medicine Eye Institute

EDUCATION
ScB, Brown University
MD, University of Rochester
Residency: University of Alabama, Birmingham
Fellowship: Neuro-Ophthalmology, Doheny Eye Institute/University of Southern California

Drs. Courtney Francis and Brian Chou.

Eugene May, MD
Clinical Associate Professor

EDUCATION
BS, Tulane University
MD, University of Chicago
Residency: Walter Reed Army Medical Center
Fellowship: Neuro-Ophthalmology, Walter Reed Army Medical Center

Raghu Mudumbai, MD
Associate Professor; Division DIrector, Glaucoma

EDUCATION
BA, City University of New York
MD, City University of New York/State University of New York
Residency: State University of New York
Fellowship: Glaucoma, New York Eye and Ear Infirmary
Neuro-Ophthalmology, Orbit, Oculoplastics, University of Minnesota

OCULAR ONCOLOGY

Andrew W. Stacey, MD, MSc
Associate Professor

EDUCATION
BS, Brigham Young University
MD, Ohio State University
MS, Statistics, Brigham Young University
Residency: University of Michigan Kellogg Eye Center
Fellowship: Ocular Oncology, Moorfields Eye Hospital and St. Bartholomew Hospital

OCULOPLASTIC AND RECONSTRUCTIVE SURGERY

Christopher Chambers, MD
Associate Professor
Director, Oculoplastic and Reconstructive Surgery Fellowship

EDUCATION
BS, University of Notre Dame
MD, Ohio State University
Residency, Kresge Eye Institute
Fellowship, Opthalmic Plastic and Reconstructive Surgery, University of Pennsylvania

Shu-Hong (Holly) Chang,MD
Clinical Associate Professor

EDUCATION
BA, Duke University
MD, Johns Hopkins University
Residency: Washington University
Fellowship: Ophthalmic pathology, Washington University; Orbital and Oculofacial plastic and Reconstructive surgery, UCLA

Matthew Zhang, MD
Associate Professor

EDUCATION
BS, University of Washington
MD, University of Pittsburgh
Residency: Vanderbilt Eye Institute
Fellowship: Oculoplastic and Orbital Surgery, Wills Eye Hospital and Lankenau Medical Center

Faculty honored as 'Top Docs' by Seattle and Seattle Met magazines

UW Medicine Ophthalmology faculty members have been honored as being among Top Doctors 2024 by Seattle Met magazine in its September 2024 issue and Seattle's Top Docs for 2024 by Seattle Magazine in its July 2024 issue. All were nominated by their peers.

Faculty honored as Top Doctors by Seattle Met Magazine are:

Michelle Cabrera, MD (pediatrics); Professor; Division Director, Pediatric Ophthalmology

Erin Herlihy, MD (pediatrics); Associate Professor; Director, Pediatric Ophthalmology Fellowship

Thellea Leveque, MD, MPH (comprehensive/uveitis); Clinical Professor; Division Director, Comprehensive Ophthalmology

Jennifer Yu, MD, PhD (comprehensive); Clinical Associate Professor; Director, 4W Ophthalmology Clinic at Harborview; Director of Trauma and Consult Services at Harborview

Faculty honored as Top Docs by Seattle Magazine are:

Michelle Cabrera, MD (pediatrics); Professor; Division Director, Pediatric Ophthalmology

Christopher Chambers, MD (oculoplastics); Associate Professor; Division Director, Oculoplastic and Reconstructive Surgery

Philip Chen, MD (glaucoma); Professor; Grace E. Hill Endowed Chair; Vice Chair for Clinical Services, Chief of Ophthalmology, Harborview Medical Center

Shu Feng, MD (comprehensive), Assistant Professor; Director of Medical Student Education

Courtney Francis, MD (neuro-ophthalmology); Associate Professor; Division Director, Neuro-Ophthalmology; Medical Director, UW Medicine Eye Institute

Eugene May, MD (neuro-ophthalmology); Clinical Associate Professor

Raghu Mudumbai, MD (glaucoma and neuro-ophthalmology); Associate Professor; Division Director, Glaucoma

Russell Van Gelder, MD, PhD (uveitis); Boyd K. Bucey Memorial Professor and Chair, UW Medicine Department of Ophthalmology; Director, Roger and Angie Karalis Johnson Retina Center; Director, UW Vision Science Center

Jennifer Yu, MD, PhD (comprehensive); Clinical Associate Professor; Director, 4W Ophthalmology Clinic at Harborview; Director of Trauma and Consult Services at Harborview

OPTOMETRY

Nancy Ross Anibarro, OD
Teaching Associate
Division Director, Optometry

EDUCATION
BA, Western Washington University
OD, Pacific University of Optometry,
Post-graduate training: Westside VAMC, Chicago, IL: Hines VAMC Blind Rehabilitation Center

Hoi Yee (Zoe) Leung, OD
Teaching Associate

EDUCATION
BS, University of Washington
OD, College of Optometry, State Univ. of New York
Post-graduate training: Thomas E. Creek VA Medical Center

Vivian Manh, OD, MS
Clinical instructor

EDUCATION
BSC, University of Waterloo School of Optometry
OD, University of Waterloo School of Optometry
MS, Indiana University School of Optometry
Post-graduate training: Southern California College of Optometry

Jennifer Truong, OD
Teaching Associate

EDUCATION
BS, Kinesiology -Sports Medicine, California Poly
BS, Vision Science, Salus University College of Optometry
OD, Salus University
Post-graduate training: Department of Veterans Affairs, Memphis, TN

Remembering Avery Weiss, MD

Avery Weiss, MD, Professor Emeritus of Ophthalmology, passed away from brain cancer on Dec. 1, 2024. He was 75. He joined UW in 1991. For many years, Dr. Weiss was the only ophthalmologist and Division Chief at Seattle Children's. He was a fixture at the children's hospital and an important member of multidisciplinary teams diagnosing complex patients.

Avery was a wonderful colleague, mentor, and physician in our department. His commitment was exceptional, and his quirky sense of humor delighted trainees and patients alike.

Avery was a dedicated lifelong learner who threw himself into his research, even writing papers in his final weeks. He was an important inspiration for many students and trainees to enter ophthalmology and pediatric ophthalmology careers. He is deeply missed.

PEDIATRIC OPHTHALMOLOGY

Francine M. Baran, MD
Cinical Associate Professor

EDUCATION
BS, Washington University
MD, Drexel University College of Medicine
Residency: State University of New York Downstate
Fellowship: Pediatric, Children's National Medical Center

Michelle Cabrera, MD
Professor, Chief, Division of Ophthalmology, Seattle Children's

EDUCATION
BS, Stanford University
MD, UCSF
Residency: UCSF
Fellowship. Pediatric Ophthalmology and Strabismus, Duke Eye Center

Erin Herlihy, MD
Associate Professor
Director, Pediatric Ophthalmology Fellowship

EDUCATION
BS, University of Notre Dame
MD: Loyola University
Residency: University of Washington
Fellowship: Pediatric Ophthalmology and Strabismus, University of Michigan

Laura C. Huang, MD
Assistant Professor

EDUCATION
BA, UCLA
MD, University of Miami
Residency: Stanford University
Fellowship: Pediatric Ophthalmology and Strabismus, University of Washington; Uveitis and Intraocular Inflammation, University of Washington

Kristina Tarczy-Hornoch, MD, DPhil
Professor

EDUCATION
BA, University of Oxford, UK
MD, University of California at San Francisco
D. Phil., Neurophysiology, University of Oxford, UK
MS, Clinical and Biomedical Investigation, University of Southern California
Residency: University of Southern California
Fellowship: Pediatric Ophthalmology and Strabismus, Johns Hopkins Hospital

UVEITIS AND OCULAR INFLAMMATION

Laura C. Huang, MD

Assistant Professor

EDUCATION

BA, UCLA
MD, University of Miami
Residency: Stanford University
Fellowship: Pediatric Ophthalmology and Strabismus, University of Washington; Uveitis and Intraocular Inflammation, University of Washington

Miel Sundararajan, MD

Assistant Professor

EDUCATION

BS, Rice University
MD, Baylor College of Medicine
Residency: New York Eye & Ear Infirmary
Fellowship: Uveitis, UCSF; Cornea & External Disease , UCSF

Thellea Leveque, MD, MPH

Clinical Professor; Division Director, Comprehensive Ophthalmology

EDUCATION

BA, Amherst College
MD, Duke University
MPH, Clinical Leadership, University of North Carolina
Residency: University of Michigan
Fellowship: Uveitis, University of Washington

Russell N. Van Gelder, MD, PhD

Professor, Boyd K. Bucey Memorial Chair, UW Medicine Department of Ophthalmology, Director, Karalis Johnson Retina Center
Director, UW Vision Science Center

EDUCATION

BS, Stanford University
MD, Stanford University
PhD, Stanford University Hospital and Veterans Administration Hospital
Residency, Barnes-Jewish Hospital and Washington University
Fellowships, Uveitis and Medical Retina, Barnes Retina Institute

Kathryn L. Pepple, MD, PhD

Associate Professor
Director, Uveitis Fellowship

EDUCATION

BS, University of Oklahoma
MD, Baylor College of Medicine
PhD, Baylor College of Medicine
Residency, Duke University
Fellowships, Medical Retina, Duke University; Uveitis, University of Washington

2023-24 GRADUATING FELLOWS

Uveitis fellow Yamini Attiku, MD, right, with Clinical Professor Thellea Leveque, MD, MPH, and Bucey Chair Russ Van Gelder, MD, PhD.

Retina fellow Swati Agarwal-Sinha, right, with Professor Lisa Olmos de Koo, MD, MBA.

Pediatrics fellow Jeannette Stallworth, MD, center, with Professor Kristina Tarczy-Hornoch, MD, D.Phil., Professor Michelle Cabrera, MD, Associate Professor Erin Herlihy, MD and Assistant Professor, Laura Huang, MD.

Training the next generation of physicians and vision scientists

The University of Washington Department of Ophthalmology has trained more than 200 eye physicians and surgeons since 1966. Our current trainees include 20 residents and five fellows.

2023-24 Residents: Back row, Deborah Im, Dany Hage, Jonathan Le, Zesee Mekonnen, Sam Kushner-Lenhoff. Middle row, Grant Howell, Amanda Hoyer, Shaun Bains, Marc Toral, Cameron Ward, Ryan Yanagihara, Nicole Mattson, Gayathri Tummala. Front row: Hannah Hashimi, Alyssa Bonnell, Aleyka Rajanala, Laura Selby and Sara Hojjatie. Not pictured: Johnson Huang, Marcus Turner.

RESIDENCY PROGRAM

The Ophthalmology residency program is designed to develop clinicians well trained in medical and surgical ophthalmology and 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.

FELLOWSHIP PROGRAMS

Hargiss Ophthalmic Plastic & Reconstructive Surgery Fellowship

Kinyoun Medical Retina and Vitreoretinal Surgery Fellowship

Pediatric Ophthalmology Fellowship

Gensheimer Fellowship in Ocular Inflammatory Diseases

Glaucoma Fellowship (new for 2025-26)

Neuro-Ophthalmology Fellowship (new for 2025-26)

Class of 2024: fellows and residents

2024 resident graduates Hannah Hashimi, Laura Selby, Alyssa Bonnell, Aleyka Rajanala and Sara Hojjatie with Residency Director Parisa Taravati, MD and Bucey Chair Russ Van Gelder, MD, PhD.

Five residents and three fellows were honored at the annual graduation dinner, which was held June 15, 2024 at the Women's University Club in Seattle.

The graduation event honored fellows Swati Agarwal-Sinha, MD (Retina), Yamini Attiku, MD (Uveitis), and Jeannette Stallworth. MD (Pediatrics). Agarwal-Sinha is going to private practice in Las Vegas, Attiku to Fort Meyers, Fla., and Stallworth is staying in the Seattle area.

The graduating residents are Alyssa Bonnell, MD (retina fellowship at UW), Hannah Hashimi, MD (pediatrics fellowship at Duke), Sara Hojjatie, MD (private practice), Aleyka Rajanala, MD (cornea fellowship at UCSF), and Laura Selby, MD (private practice).

Marc Toral, MD, PhD, a second-year resident, received the Resident Research Award. Professor Kristina Tarczy-Hornoch, MD, DPhil., was honored as the faculty teacher of the year. Paul Israelsen, MD, was honored as the volunteer teacher of the year. Myduyen Ngo, education program manager, was honored as the staff person of the year.

Dr. Paul Israelson was honored as the volunteer teacher of the year at the annual graduation dinner.

Clerkships provide medical students an introduction to ophthalmology

Each year, medical students from the UW and elsewhere spend two to four weeks doing an ophthalmology clerkship.

"It gives them an opportunity to learn about ophthalmology," said Assistant Professor Shu Feng, MD, director of medical student education. "A clerkship is an elective for students in the UW School of Medicine that may be interested in ophthalmology or just expanding their knowledge of the eyes."

Assistant Professor Shu Feng, MD, director of medical student education, meets with students doing their clerkships in the Dept. of Ophthalmology.

During their clerkship, the students learn exam techniques, take a history, and do consults in the ER or in the hospital.

"They get to spend time with our faculty physicians and residents, getting a broad exposure to the work in the Eye Institute and the 4-West clinic at Harborview," Dr. Feng said.

The clerkship gives them the complete picture of what an ophthalmologist does so that if they go into another specialty, they will know how to diagnose an eye problem or when to refer the patient to an ophthalmologist.

Clerkships are offered at several locations, including Harborview, Seattle Children's, the Seattle VA Medical Center, and community sites in the WWAMI region.

For those medical students at UW, the clerkship is a "chance to recruit great students and see if it is a fit for them and us," Dr. Feng said.

There are also clerkships available to medical students from outside the UW interested in applying for residency here. Dr. Feng herself was a visiting scholar at UW as a medical student at Oregon Health Sciences University before doing her residency here.

"I remember meeting (Professor Emeritus) Dr. (Robert) Kalina and many of the faculty and residents. It really gave me a sense of what it is like to come here for residency," she said.

In addition to experience in the hospital and clinics, each medical student must present a case to Dr. Feng and others about a patient they saw and what they learned about their eye problem.

"The clerkship program is a great way for us to support our medical students and teach them about eye conditions so as doctors, they can appropriately know the basics of any common eye complaint or eye emergency," Dr. Feng said.

‘Doctor for a Day’ event highlights careers in ophthalmology

Department of Ophthalmology faculty and residents participated in “Doctor for a Day,” an outreach program for youth of from from all backgrounds in the greater Seattle area. The aim is to inspire and encourage middle and high school students to consider medicine or other healthcare careers.

Organized by UW School of Medicine students, Doctor for a Day events comprise hands-on stations. Ophthalmology faculty and residents offered several tables for the students to explore vision testing, color vision, stereopsis, suturing practice, viewing the retina with indirect ophthalmoscopes, viewing their retina with a camera, and other fun items like a cataract and AMD simulator.

Doctor for a Day focuses on increasing underrepresented students in health professions. Research shows that without intervention in elementary school, underrepresented students may lose interest in science and math by their teens and discount their abilities in those subjects before finishing high school.

More than 100 students in grades K-12 participated in the event in the Health Sciences Education Building on the Seattle campus. The neurosciences and pathology departments also participated.

Representing the Ophthalmology faculty at the 2024 event were Drs. Karine Duarte Bojikian, Shu Feng, Laura Huang, Miel Sundararajan, and Jennifer Yu, who were joined by residents Drs. Johnson Huang, Nicole Mattson, and Ryan Yanagihara.

Seattle-King County Clinic provides care to underserved communities

Giving back to the community is an integral part of Dr. Miel Sundararajan's mission as an ophthalmologist.

"I have always been involved in caring for the underserved and wanted to bring that here," said Dr. Sundararajan, Assistant Professor and specialist in cornea and uveitis. "It's exciting for me to be involved in broadening our outreach as a department."

Dr. Miel Sundararajan directs outreach efforts for the department.

Dr. Sundararajan is the director of community outreach for the department. Under her leadership, trainees and staff have participated in several outreach activities over the past year.

These have included the yearly Seattle-King County community clinic at Seattle Center. Dr. Sundararajan was joined by residents and fellows who have gained valuable experience treating underserved populations.

The four-day volunteer-driven clinic provides free dental, vision, and medical care to anyone in the region who struggles to access or afford healthcare.

The clinic provided more than $2.6 million in comprehensive healthcare to over 2,900 people. In its 10 years of operation, the Clinic has provided free healthcare to more than 30,000 patients who have fallen through the region's healthcare gaps. All were unable to afford or access the care they were seeking elsewhere.

Residents treated ophthalmology patients at the Seattle/King County Clinic at Seattle Center.

PUBLICATIONS

ACADEMIC YEAR 2024 (JULY, 2023 THROUGH JUNE, 2024)

Zhou Y, Chia MA, Wagner SK, Ayhan MS, Williamson DJ, Struyven RR, Liu T, Xu M, Lozano MG, Woodward-Court P, Kihara Y; UK Biobank Eye & Vision Consortium; Altmann A, **Lee AY**, Topol EJ, Denniston AK, Alexander DC, Keane PA. A foundation model for generalizable disease detection from retinal images. Nature. 2023 Oct;622(7981):156-163.

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Giarmarco M, Seto J, Brock D, **Brockerhoff S**. Spatial detection of mitochondrial DNA and RNA in tissues. Front Cell Dev Biol. 2024 May 14;12:1346778.

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Cheong KX, Zhang C, Tan TE, Fenner BJ, Wong WM, Teo KY, Wang YX, Sivaprasad S, Keane PA, **Lee CS, Lee AY**, Cheung CMG, Wong TY, Cheong YG, Song SJ, Tham YC. Comparing generative and retrieval-based chatbots in answering patient questions regarding age-related macular degeneration and diabetic retinopathy. Br J Ophthalmol. 2024 May 15:bjo-2023-324533.

Davidson O, Rajesh AE, **Blazes M**, Batchelor A, **Lee AY, Lee CS, Huang LC**; IRIS® Registry Analytic Center Consortium. Sociodemographic and Visual Outcomes of Juvenile Idiopathic Arthritis Uveitis: IRIS® Registry Study. Clin Ophthalmol. 2024 May 8;18:1257-1266.

Kim SY, **Chambers CB**, Ahn JH. Efficacy of adjuvant mitomycin-C and triamcinolone-impregnated nasal packing for endoscopic dacryocystorhinostomy. Int J Ophthalmol. 2024 Mar 18;17(3):480-484.

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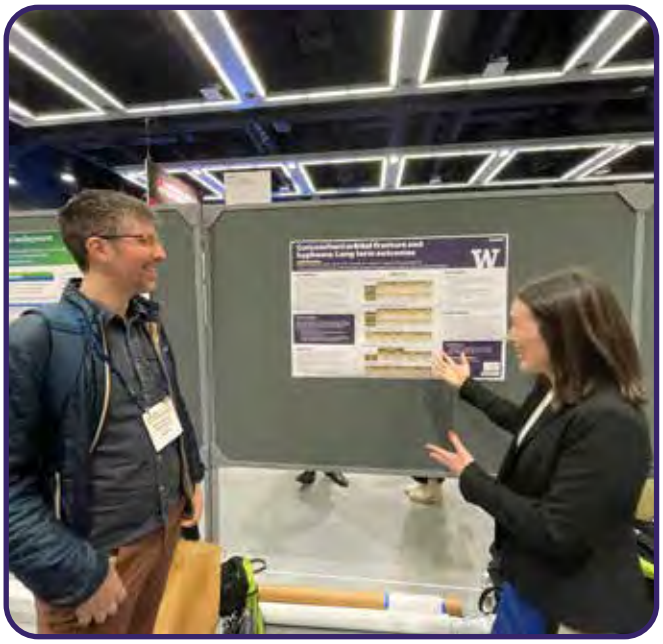
Seattle rolls out the red carpet for ARVO

Seattle welcomed 10,000 ophthalmology researchers, clinicians and scientists for The Association for Research in Vision and Ophthalmology (ARVO) 2024 Annual Meeting "Vision for the Future" at the Seattle Convention Center. The UW Department of Ophthalmology was well represented, presenting several research talks and numerous posters. The ARVO Annual Meeting returns to Seattle in 2029.



At left, UW medical student Marlow Schulz presents her poster at ARVO 2024 in the Seattle Convention Center. Above, resident Nicole Mattson. MD explains her research to Assistant Professor Chris Fortenbach, MD. PhD.

Matt Oliva, MD presents inaugural Honored Alumni Lecture

Matthew Oliva, MD, residency class of 2003, gave the first Honored Alumni Lecture at the 50th Resident Alumni Day on June 15, 2024 at UW Medicine South Lake Union.

Dr. Matt Oliva celebrates a successful outcome with a pediatric patient in Ethiopia during a Cure Blindess Project site visit.

Dr. Oliva has worked in a multi-specialty practice in Medford, Ore., since 2008 and is the board chair of Cure Blindness. He spends 6 to 8 weeks a year in the African countries of Somaliland, Eritrea, and Ethiopia, working to eradicate avoidable blindness in under-resourced areas by helping people retain and regain their sight.

Cure Blindness grew out of the Himalayan Cataract Project, which began in Nepal, which had the highest number of preventable blindness cases in the world.

Dr. Oliva has performed thousands of cataract surgeries in Nepal and now in Africa and trained doctors there to provide necessary eye care.

"Hopefully I can inspire young doctors to get involved; there is such a need around the world. In ophthalmology, we have a skill we can teach, and we can give the gift of sight."

As a medical student, he went to Africa with the Wilmer Eye Institute and then met the founder of the Himalayan Cataract project in Nepal. During that experience, he "knew that international ophthalmology was what I wanted to do." The Himalayan Cataract Project, now rebranded as Cure Blindness Project, has performed 1.4 million eye surgeries worldwide, starting in Nepal, but now the majority of work is in Africa (Ethiopia, Ghana, Eritrea, and 10 other countries).

"We focus on developing sustainable, comprehensive eye care systems. This includes cataract surgery outreach programs to reach the blind in remote areas, training doctors and nurses at all levels with a special focus on residency training in Africa, critical eyecare infrastructure procurement and maintenance, as well as advocacy for eyecare resources," Oliva said, "blindness is the 'low hanging fruit' of public health and a problem that we know how to solve if we bring enough resources to bear."

OUR DONORS, OUR THANKS

We extend appreciation to our philanthropic partners, whose generosity accelerates our ability to conduct cutting-edge research, provide excellent patient care, and train the next generation of ophthalmologists. To learn more about giving opportunities, please contact Michelle La Pierre, director for philanthropy at 206.616.7713 or mlb18@uw.edu. You can learn how UW Medicine is improving the health of our communities and beyond by visiting give.uwmedicine.org.

Every effort has been made to include all donors to the Department of Ophthalmology between July 1, 2023 and June 30, 2024.

Anonymous (11)

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COMMUNITY ACTION BOARD: CELEBRATING 15 YEARS

The Department of Ophthalmology celebrated the Community Action Board's 15th anniversary at a dinner on Oct. 14, 2024 at the Women's University Club.

The Community Action Board is a group of committed volunteers who advance the Eye Institute's mission by serving as ambassadors in our community, advising faculty on matters of strategic importance, and generously supporting our mission. Philanthropic gifts help to accelerate innovation in the form of seed grants for our faculty research. We are honored and privileged to work with such a fine group of individuals as we pursue our mission of eliminating blinding eye disease.

Celebrating the 15th anniversary of the Community Action Board and Eye Institute are from left, Dr. Phil Chen, Mark LaPierre, Marnie LaPierre, Nanette Freeman and Brad Simmons.

The CAB was formed after the Eye Institute opened in 2009, and more than 50 people have served.

The Community Action Board has provided support in many areas, including:

- Art for the Institute
- Community outreach for talks and support
- Educational materials for our students and residents
- Outreach videos for the institute
- Support for students and trainees in our laboratories and clinics
- Latham Vision Research Innovation Awards
- Lions Gift of Sight
- Johnstone and Freeman Resident Travel Awards
- Medical Student Interest Night hosting

Since opening in 2009, the Eye Institute has seen more than 500,000 patient visits and 70,000 individual patients. Eye Institute faculty have performed over 40,000 surgeries and provided millions of dollars of charity care. The department's endowment has grown to nearly $50 million, and the department now ranks third in the nation for research funding from the NIH.

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Ninth & Jefferson Building
7th Floor
908 Jefferson St.
Seattle, WA 98104
206.744.2020

Karalis Johnson Retina Center at South Lake Union

750 Republican Street
Building F, 1st Floor
Seattle, WA 98109
206.744.2020

Eye Center at UWMC-Montlake

University of Washington Medical Center-Montlake
NN 300
1959 N.E. Pacific St.
Seattle, WA 98195
206.744.2020

Ophthalmology (Eye) Clinic at Harborview

Harborview Medical Center
4th Floor, West Clinic
325 Ninth Ave.
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Ravenna
4915 25th NE, Suite 300W
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1355 N. 205th St.
Shoreline, WA 98133
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Ninth & Jefferson Building
908 Jefferson St., Suite 101
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