

ADVANCING

VISION



2019 ANNUAL REPORT



Department of Ophthalmology
and Visual Sciences
UNIVERSITY OF WISCONSIN
SCHOOL OF MEDICINE AND PUBLIC HEALTH

OUR VISION

Global leadership in saving sight.



OUR MISSION

To improve vision-related quality of life by collaboratively creating, integrating, transmitting and applying knowledge in ophthalmology and visual sciences.

FROM THE CHAIR...3

BY THE NUMBERS...4

YEAR IN REVIEW...6

HONORS...8

WE REMEMBER...10

**NEW YEAR, NEW
RESIDENTS...11**

FORWARD FOCUSED...12

**STEM CELLS SAVING
SIGHT...13**

**CLINICAL & RESEARCH
FACULTY...14**

OPTOMETRY FACULTY...24

AMAZING ALUMNI...25

VISITING PROFESSORS...26

**A VISION—FOR BETTER EYE
CARE...27**

NEW FACULTY & STAFF...28

**RESIDENTS, FELLOWS, POST-
DOCTORAL, & GRADUATE
STUDENTS...30**

A NEW WAY OF IMAGING...32

**RARE EYE CONDITION
REVEALED BY GENETIC
TEST...34**

**TRAINING TODAY
FOR TOMORROW'S
DISCOVERY...36**

**INTERNATIONAL
OPHTHALMOLOGY
ADVANCES...38**

A NEW WAY TO WAIT...40

**CLINICAL EYE RESEARCH
UNIT...41**

PUBLICATIONS...42

DONOR HONOR ROLL...48

**DEPARTMENT
LEADERSHIP...50**

***PROGRESS LIES NOT IN
ENHANCING
WHAT IS, BUT IN
ADVANCING
TOWARD WHAT WILL BE.***

— KHALIL GIBRAN

ADVANCING VISION

Department of Ophthalmology and Visual Sciences
University of Wisconsin–Madison
School of Medicine and Public Health

FROM THE CHAIR

Dear Friends,

As we approach our 50th anniversary as an established medical school department in 2020, I wish to share with you some of the wonderful departmental accomplishments of this year. It is indeed an exciting time as our team members continue in their quest to save sight through research discovery, adopting new patient care approaches, developing innovative treatments, and employing different teaching models for providers and researchers in training.

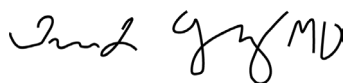
In this 2019 annual report of the department, you will find stories from our patients, faculty, learners, and administrators. These stories are your stories—we could not do this work without you as our inspiration.

The University of Wisconsin Department of Ophthalmology and Visual Sciences continues to be a leader in saving sight by focusing on our top priority, which is you. Inside you will learn of some of our initiatives:

- Stem cell and gene therapy progress for inherited retinal disorders.
- A near-blind North Freedom man who regained sight after his last-ditch effort visit with a genetic counselor and provider specialist to Wisconsin's sole Inherited Retinal Degeneration Clinic.
- New partnerships in our International Ophthalmology Program for trainees.
- Our department's teleophthalmology screening program, which provides accessible eye care for those living with diabetes in rural Wisconsin.
- Enhanced clinical practices and technologies through lean modeling, which places the patient at the center of their care experience.

Should you have thoughts on how we can be of better service, please feel free to contact me at any time. I am grateful to you for supporting our people and mission to save sight—thank you!

On, Wisconsin!



Terri L. Young, MD, MBA, FARVO

Chair, UW–Madison Department of Ophthalmology and Visual Sciences

Peter A. Duehr Endowed Professor of Ophthalmology, Pediatrics and Medical Genetics



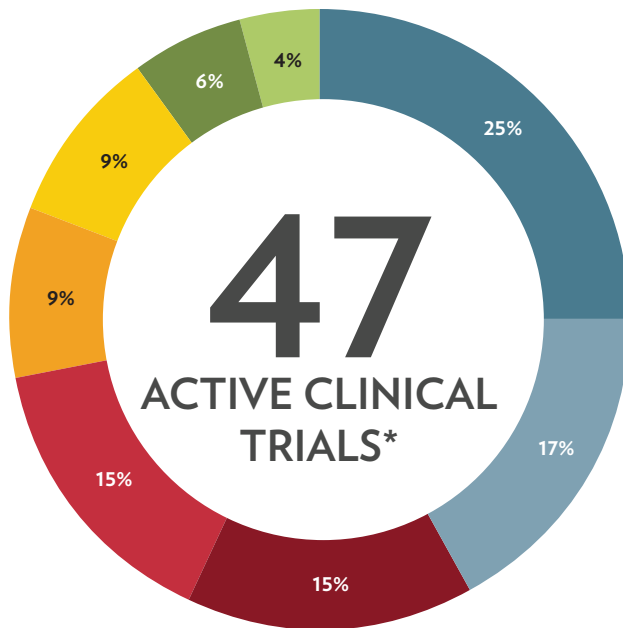
Dr. Terri L. Young speaking at the first Spirit of Aging Camp on September 25, 2019.



Special thanks to our cover model, Fiorella, and to her amazing mother, Milagros!

2019, BY THE NUMBERS

Our researchers, clinicians, educators and learners are at the forefront of saving sight locally and beyond—see their impact on stopping the progression of blinding diseases.

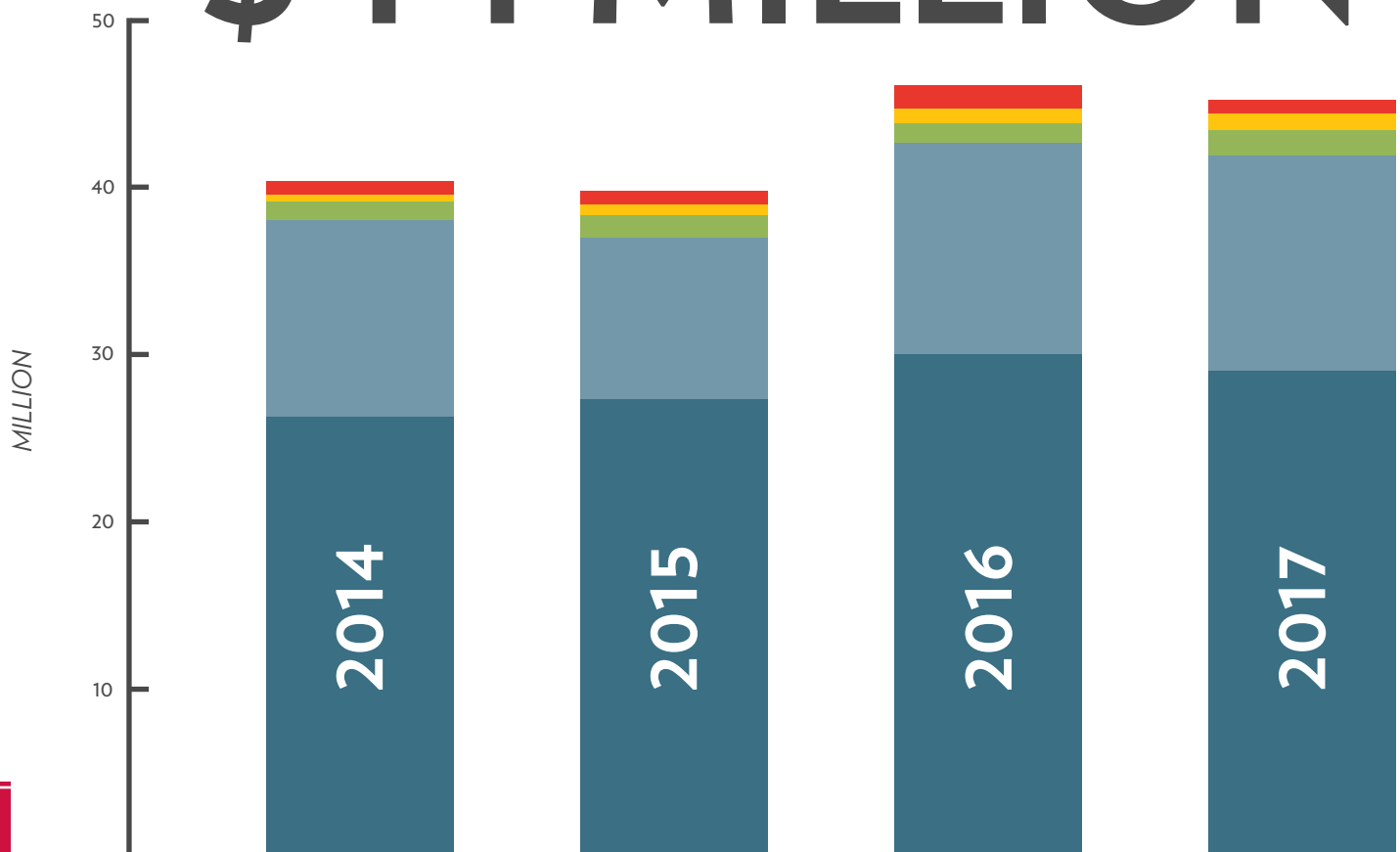


CLINICAL TRIALS BY INDICATION

- Investigator Initiated Trials
- Age-Related Macular Degeneration
- Genetic Eye Disorders
- Thyroid, Herpes, Uvetis
- Retinal Vein Occlusion
- Pediatric Eye Disorders
- Diabetic Eye Disorders
- Cancer, Cystic Fibrosis, Nephrology Collaborations

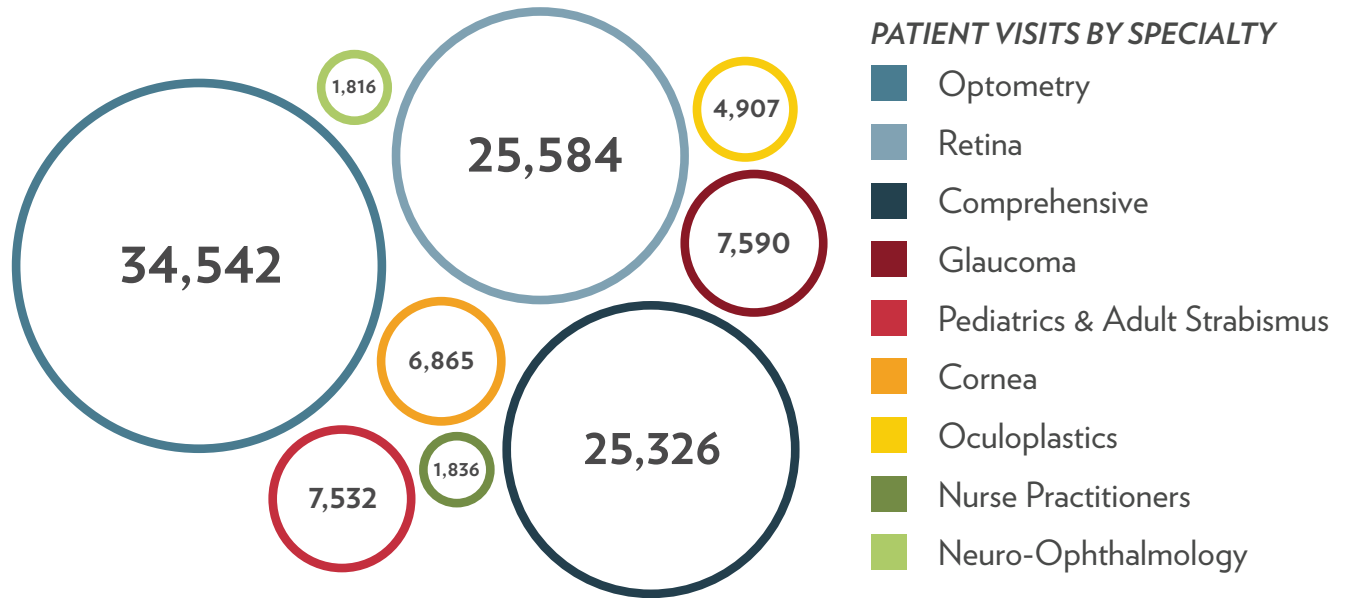
*Between October 1, 2018 and October 1, 2019

\$44 MILLION⁺

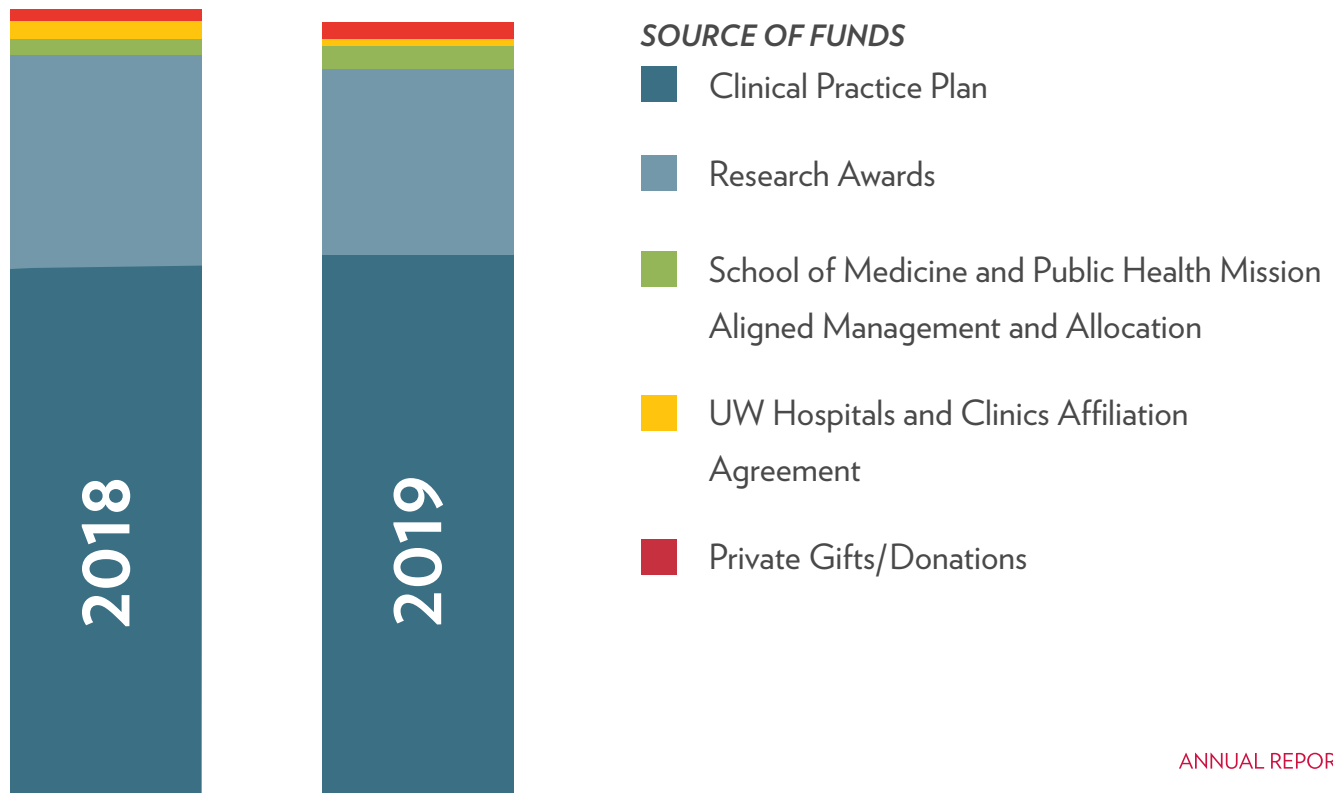


115,998⁺

TOTAL
PATIENT
VISITS



IN TOTAL FUNDING,
FISCAL YEAR 2019



2019



SEPTEMBER 24–OCTOBER 26, 2018
University of São Paulo International Exchange Rotation with Dr. Thaisa Silveira Barbosa (at right, pictured with Dr. Yasmin Bradfield).



OCTOBER 4, 2018
Fall Saving Sight Session featuring Dr. Dan Knoch, "Laser Assisted Cataract Surgery: Fact vs. Fiction" and patient, Dr. Thomas "Rock" Mackie.



OCTOBER 6, 2018
Right to Sight Free Eye Clinic in partnership with Combat Blindness International at University Station Clinic, Madison, WI.



OCTOBER 10, 2018
19th Bi-Annual Age-Related Macular Degeneration Symposium: 420+ attendees gather to learn the latest about this blinding disease, Alliant Energy Center, Madison, WI.



MAY 31, 2019
Low Vision Lunch and Learn featuring Dr. John Shepherd, University of Nebraska Weigel Williamson Center for Visual Rehabilitation.



MAY 14, 2019
Second Neuromodulation Course for residents led by Dr. Suzanne van Landingham at University Station Clinic, Madison WI.



APRIL 28–MAY 2, 2019
The Association for Research in Vision & Ophthalmology Annual Meeting, WEAVR Luncheon, held in Vancouver, Canada.



JUNE 21, 2019
Learner's Day in partnership with Medical College of Wisconsin at UW–Madison's HSLC.



JUNE 21, 2019
Resident and Fellow Graduation Celebration at the Fluno Center, Madison, WI.



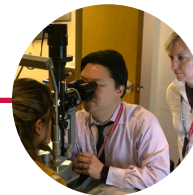
JULY 1, 2019
DOVS welcomes new residents and fellows as they begin their ophthalmology training at UW–Madison.



OCTOBER 12–15, 2019
DOVS exhibition featuring a virtual walkthrough of a fundus at the 2019 AAO Annual Meeting in San Francisco, CA.



OCTOBER 12, 2019
UW Ophthalmology Alumni and Friends Celebration at AAO, WaterBar, San Francisco, CA.



OCTOBER 5, 2019
Right to Sight Free Eye Clinic in partnership with Combat Blindness International at University Station Clinic, Madison, WI.

YEAR IN REVIEW



OCTOBER 27, 2018
UW Ophthalmology Alumni and Friends Celebration at AAO, Untitled, Chicago, IL.



OCTOBER 27-29, 2018
DOVS' first exhibition at AAO Annual Meeting, Chicago, IL.



FEBRUARY 1-15, 2019
Senior Resident Rotation at Shroff's Charity Eye Hospital, New Delhi, India.



APRIL 12, 2019
Annual George K. Kambara, MD, Vision Science Symposium at the UW-Madison Health Sciences Learning Center (HSLC).



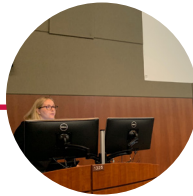
APRIL 9, 2019
First Saving Sight Session in Rockford, IL: "An Update on Diabetic Retinopathy: Diagnosis and Treatments" by Dr. Justin Gottlieb with a word from patient, Jane Hulstedt.



MARCH 16, 2019
Wintermission + Retirement Celebration at Dave & Busters, Madison, WI.



AUGUST 16-17, 2019
38th Annual Multiphasic Phacoemulsification Skills Course held at UW-Madison's HSLC.



SEPTEMBER 7, 2019
19th Annual Current Concepts in Eye Care for Optometrists at UW-Madison's HSLC.



SEPTEMBER 7, 2019
First Current Concepts in Eye Care for Technicians at UW-Madison's HSLC.



OCTOBER 3, 2019
Mauston Women's Night Out featuring the UW Teleophthalmology program in Mauston, WI.



SEPTEMBER 25, 2019
First-ever Spirit of Aging Camp in partnership with the Division of Geriatrics and Gerontology at Union South, Madison, WI.



SEPTEMBER 9-OCTOBER 11, 2019
University of São Paulo International Exchange Rotation with resident trainee Dr. Ana Letícia Darcia.

HONORS

Faculty Honored with AAO Secretariat Awards

Three Department of Ophthalmology and Visual Sciences (DOVS) faculty were granted the American Academy of Ophthalmology's (AAO) Secretariat Award: Cat Burkat, MD, FACS, professor and oculoplastics specialist; Justin Gottlieb, MD, professor and retina specialist, and Daniel Knoch, MD, associate professor and director of medical student education. The Secretariat Award recognizes special contributions to the Academy and to ophthalmology.



Dr. Burkat was recognized for four years of service as the lead editor for the oculoplastics section of EyeWiki. During Dr. Burkat's tenure, she oversaw the most regularly updated and meticulously maintained section in EyeWiki, and in 2018 Dr. Burkat contributed edits to more than 90 articles, three times greater than any other editor. Concurrently, Dr. Burkat was, and still is, an active member of Basic Clinical and Science Course Section 7, Oculofacial Plastic and Orbital Surgery, which underwent a major revision for 2019.



Dr. Gottlieb was acknowledged for his leadership, contributions, and dedication to the Practicing Ophthalmologist Curriculum (POC). Dr. Gottlieb has served on the POC panel, reviewing and contributing content to the retina/vitreous practice emphasis area from 2009 to the present. The award also recognizes his service as an instructor for the Maintenance of Certification Exam Review course in 2013, 2014, 2016 and 2017.



Dr. Knoch was recognized for his efforts in leading a team of physician medical student educators in the development and maintenance of interactive online cases on the Academy's medical student website. Dr. Knoch's advice on new features and content formats added value and helped increase usage across the board.

DOVS Recognized for Contributions to Medical Student Education

The School of Medicine and Public Health (SMPH) recently recognized DOVS and several faculty members within the department for their ongoing commitment and dedicated service to UW medical students. The following is a list of faculty who were acknowledged in the SMPH report.

- **Barbara Blodi, MD**, faculty mentor to a student performing a research honors elective in 2017–18; faculty mentor to two students performing research electives in 2017–18 and fall 2019
- **Cat Burkat, MD, FACS**, faculty mentor to a 2018 Shapiro summer research student
- **David Gamm, MD, PhD**, faculty mentor to a student performing a research honors elective in 2017–18
- **Daniel Knoch, MD**, led an ophthalmology rotation option within the legacy year-three neuroscience clerkship
- **Mihai Mititelu, MD**, faculty mentor to two students performing research honors electives in 2017–18; faculty mentor to a student performing a research elective in 2017–18 and fall 2019
- **Heather Potter, MD**, served as vice chair of the 2017–18 medical student admissions committee
- **Melanie Schmitt, MD**, faculty mentor to a student performing a research elective in 2017–18 and fall 2019

- **Kimberly Stepien, MD**, faculty mentor to a student performing a research elective in 2017–18 and fall 2019
- **Suzanne van Landingham, MD**, faculty mentor to a student performing a research honors elective in 2017–18; faculty mentor to a student performing a research elective in 2017–18 or fall 2019
- **Terri Young, MD, MBA, FARVO** faculty mentor to a 2018 Rural and Urban Scholars in Community Health undergraduate summer research student

Hoon Lab Secures UW2020 Funding

The Hoon Research Laboratory, led by Mrinalini Hoon, PhD, assistant professor, has been awarded \$500,000 by the UW2020: WARF Discovery Initiative Cohort for the project, “Imaging the Third Dimension at the Nanometer Resolution.”

The award will be used to acquire a 3View serial block face scanning electron microscope that will allow for large-scale 3D reconstructions of cellular structures and connectivity measures at the finest resolution.



The Hoon Lab members (left to right): Abhilash Sawant, Julie Wallin, Dr. Mrinalini Hoon, Briana Ebbinghaus.

“We are very excited about bringing this technology as a shared campus facility. This instrument will allow ultra fine-scale 3D reconstructions of cellular ensembles and tissue structures and will definitely bolster biological research on campus not only in terms of electron microscopy tools but also in terms of the questions researchers can ask. For our lab this means asking questions about how retinal nerve cells connect and communicate with one another in health and disease.”

— Dr. Mrinalini Hoon, Assistant Professor

The UW2020 initiative is funded by the Office of the Vice Chancellor for Research and Graduate Education and the Wisconsin Alumni Research Foundation. The UW2020 project aims to support groundbreaking research at UW–Madison.

BY THE NUMBERS



#20

HOSPITAL IN THE UNITED STATES

According to U.S News & World Report for 2019–2020



Image provided by Bryce Richter/UW–Madison Communications

WE REMEMBER



Dr. Ronald Klein.

Ronald Klein, MD, MPH

Ronald Klein MD, MPH, passed away on August 31, 2019. Ron was an esteemed faculty member of the Department of Ophthalmology and Visual Sciences for over four decades. He shared his life and his life's work with his partner of 54 years—Dr. Barbara Klein, who joined the department as a faculty member with Ron.

The Kleins led two landmark longitudinal epidemiologic studies—the Wisconsin Epidemiology Study of Diabetic Retinopathy and the Beaver Dam Eye Study. Both are groundbreaking studies spanning more than 20 years, and from their beginnings, laid the groundwork for much of our current understanding of vision impairment and its leading causes, including age-related macular degeneration (AMD), diabetic retinopathy, glaucoma and cataracts. The Kleins have been

at the forefront of new advances in ophthalmology and vision research, including imaging, genetics and disentangling gene-environment interactions. He authored or co-authored over 1,000 reports in peer-reviewed journals and more than 50 book chapters.

The Kleins have been recognized throughout the years for their seminal contributions to the field of ocular epidemiology, including the Retina Research Foundation Award of Merit (2004) and Association for Research in Vision and Ophthalmology (ARVO) Freidenwald Award (2005). In 2020, to honor their legacy, ARVO has planned a mini-symposium on AMD and diabetic retinopathy entitled: *“Epidemiology of Diabetic Retinopathy and Age-Related Macular Degeneration: Past, Present and Future—A Tribute to Barbara and Ronald Klein.”*

“Ron Klein's impact on ocular epidemiology and our department for over forty years was immeasurable, and we will forever be grateful. Ron was indeed a trusted colleague and friend, a gentleman, an adventurous soul, and a powerhouse of intellect and wit who is deeply missed by all.”

— Dr. Terri Young, Department Chair



From left to right: The Wisconsin Epidemiology Study of Diabetic Retinopathy research study team and van (1982); The Kleins posing in front of a photograph of a retinal fundus (back of the eye), (2006); The Kleins visiting the Grand Canyon (2007).

NEW YEAR, NEW RESIDENTS

NEW PROGRAM ENRICHES OPHTHALMOLOGY RESIDENT TRAINING

The 2019–2020 academic year marks the first time that the University of Wisconsin–Madison Department of Ophthalmology and Visual Sciences (DOVS), in partnership with the Department of Internal Medicine, welcomed two new first-year (PGY1) residents, Drs. Katherine Dalzotto and Chintan Pathak. The PGY1 students joined the department as a direct result of the engagement of the DOVS Ophthalmology Resident Education Team in the national discourse of training change needs almost two years ago. The program is funded through the generous support of the U.S. Department of Veterans Affairs and the William S. Middleton Veterans Administration (VA) Memorial Hospital.

The team, led by Drs. Marilyn Kay, Andrew Thliveris and Anna Momont, took action to change the existing three-year residency program well ahead of the recent announced mandate from the Accreditation Council for Graduate Medical Education (ACGME). ACGME is the private, non-profit institution responsible for accrediting all graduate medical training programs for physicians in the United States.

“We were ahead of the game with the implementation of this additional year of training. We are excited about many of the benefits this additional year will provide for our learners. By being here one year earlier, our residents will increase the breadth of their skills and experience, and will have a head start in research and academic pursuits.”

— Dr. Andrew Thliveris, Vice Chair of Resident Education and Residency Director



Drs. Chintan Pathak and Katherine Dalzotto in clinic.

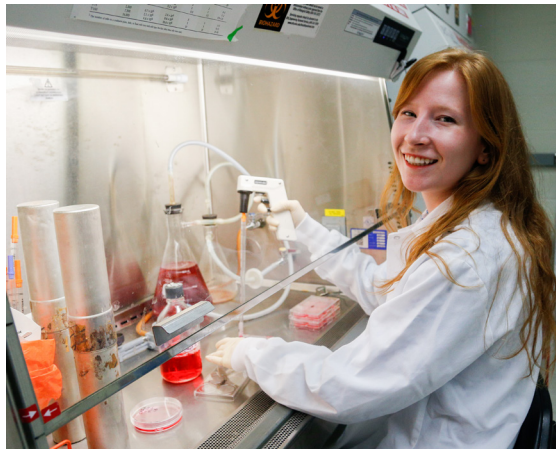
Dr. Thliveris went on to state that this work is a testament to the strong relationship that the DOVS has with the University of Wisconsin Department of Internal Medicine and the VA Hospital, as well as with the national Association of University Professors of Ophthalmology.

Drs. Dalzotto and Pathak are currently immersed in the residency training program. Dr. William Van De Car joins his PGY1 classmates in 2020 after he completes his final year of military service with the Air Force in Colorado Springs, Colorado.

The DOVS education team continues to explore new initiatives to enhance the resident training experience, and to build on our tradition of relevance. The team recently introduced a research elective in each year of the curriculum, and incorporated wellness activities. The desire is that the DOVS program will prepare all residents for the ever-changing needs in patient care and discovery at the local, national and global levels.

FORWARD FOCUSED

Two years after the launch of the innovative ForWard Curriculum at the UW School of Medicine and Public Health, the Department of Ophthalmology and Visual Sciences continues to advance medical student opportunities in vision research with the introduction of a robust research elective.



Sarah Ferguson, Research Associate, Brandt Lab.

Barbara Blodi, MD, Curtis Brandt, PhD, FARVO Amitha Domalpally, MD, PhD, Robert Nickells, PhD, and Nader Sheibani, PhD, served as the course instructors. Clinical education leaders Daniel Knoch, MD, and Andrew Thliveris, MD, PhD, worked with the researchers to develop the first iteration of the elective. Dr. Brandt was the course director.

The new, basic-science selects course, Ophthalmology 911, “Introduction to the Visual System,” was added to the medical student curriculum in March of 2019. This month-long course was blended and consisted of four modules: lectures, research paper presentations, a research project, and one day per week in the clinic.

Four medical students completed the inaugural course. Each student spent one week on each of the four modules, ultimately rotating through all four. The modules are disease-based and included age-related macular degeneration and ocular imaging; glaucoma; retinal vascular disease; and immunology, infectious disease and corneal disease.



“We [the course instructors] were excited to see that the medical students truly enjoyed the course, including the more basic science components.

Hopefully this introduces ophthalmology and vision research to them as a potential research or clinical career path.”

*— Dr. Curtis Brandt, UW Medical Foundation
Professor, Vice Chair of Research*

BY THE NUMBERS



#1

HOSPITAL IN WISCONSIN

According to U.S. News & World Report for 2019–2020



Image provided by Bryce Richter/UW-Madison Communications

STEM CELLS SAVING SIGHT

Researchers Work Towards Ending Blinding Diseases

Two decades after University of Wisconsin-Madison biologist James Thomson's unprecedented achievement in lab-grown human embryonic cells, pediatric ophthalmologist David Gamm, MD, PhD, is fighting blindness through generating 'spare parts' of human eyes, on the foundation of Thomson's leading stem-cell work.

As a pediatric ophthalmologist, Professor Gamm understands how devastating it is to a family when the child is hopelessly losing their sight due to genetic eye disorders. Frustrated with the fact that the human eye is unable to reproduce photoreceptors, the critical light-sensing cells for one's vision, and later inspired by Dr. Thomson's discovery in stem-cell research, Dr. Gamm started an almost decade-long trial on realizing lab-grown photoreceptors.

"I learned about UW-Madison researcher James Thomson's pioneering work in stem cells. We figured there must be a way to take these very undifferentiated stem cells, which are kind of little pieces of human-cell clay, and mold them into spare parts for the retina," said Gamm in an interview with the *Wisconsin State Journal* in November 2018.

Nearly ten years later, Dr. Gamm and his team have successfully developed methods to produce crucial human eye tissues in laboratories including photoreceptors and even whole human retinas, along with another project focusing on partial thickness cornea transplants, which are used to repair diseased tissue that clouds light entering the eye. Dr. Neal Barney, professor emeritus of ophthalmology, is developing a high-tech, synthetic carrier to deliver a thin, cadaver-derived corneal tissue during surgery. "These ultra-thin tissues can fold up like wet tissue paper during surgery," Barney says. "The goal is to develop and manufacture a membrane to transport this tissue to the patient and hold it in place until it grafts, and then dissolve over time." These discoveries bring hope for ending human vision loss.

Yet having practical sources of new human photoreceptors is only the first half of the mission. A much more challenging part of the battle awaits, for it is still uncertain whether the human eye can adapt regenerative cells. "If the downstream retinal circuit is a mess, putting fresh, new cells in there isn't going to be of much help. In other words, a new light bulb is of no use if the socket wires are cut," Gamm explains. "Fortunately, the socket wires appear to be in reasonable working order in many patients with photoreceptor degenerations."

Many critical questions still need to be answered, and Dr. Gamm plans to start a clinical trial with UW Hospital in 2021. Gamm and his team are continuing to work towards the cure for eye blinding disorders with stem-cell studies.

**Adapted from November 4, 2018 Wisconsin State Journal article: "UW researcher using stem cells to create 'spare part' for blindness" written by David Wahlberg.*

Dr. David Gamm examines the eyes of Gavina Zimbric, of Waterloo, at UW Health's University Station Clinic.



CLINICAL & RESEARCH FACULTY



MICHAEL M. ALTAWHEEL, MD

PROFESSOR, CO-DIRECTOR OF THE FUNDUS PHOTOGRAPH READING CENTER, RETINA FELLOWSHIP DIRECTOR

SPECIALTIES

Retina, vitreous, macula, ocular melanoma

LEADERSHIP POSITIONS

Member

UW Health Clinic Operating Room Committee
Combat Blindness International Board

GRANTS

DHHS, Public Health Services, NIH

Macular Edema Treatment Trials Associated with MUST (META-MUST)
Resub of: Adalimumab vs Conventional Immunosuppression for Uveitis (Advise) Trial

Turing Pharmaceuticals, LLC

Create an Objective Toxoplasma Grading System and Test It on Sample Photos Pre- and Post-Treatment to Determine Suitability for Use in Clinical Trials of a New Treatment

CLINICAL TRIALS

SCORE2 Long-Term Follow-Up

Study of Comparative Treatments for Retinal Vein Occlusion 2: A Multicenter, Prospective, Randomized Non Inferiority Trial of Eyes with Macular Edema Secondary to Central Retinal Vein Occlusion, Comparing Intravitreal Bevacizumab Every 4 Weeks with Intravitreal Aflibercept Every 4 Weeks

KESTREL

Evaluate the Efficacy and Safety of Brolucizumab in Treatment of Patients with Visual Impairment Due to Diabetic Macular Edema. The Study Drug will be Compared to Aflibercept to Demonstrate that the Study Drug is Non-Inferior with Respect to Visual Outcomes After the First Year of Treatment

RAVEN

An Eighteen-Month, Two-Arm, Randomized, Double Masked, Multicenter, Phase III Study Assessing the Efficacy and Safety of Brolucizumab Versus Aflibercept in Adult Patients with Visual Impairment Due to Macular Edema Secondary to Central Retinal Vein Occlusion

RAPTOR

An Eighteen-Month, Two-Arm, Randomized, Double-Masked, Multicenter, Phase III Study Assessing the Efficacy and Safety of Brolucizumab Versus Aflibercept in Adult Patients with Visual Impairment Due to Macular Edema Secondary to Branch Retinal Vein Occlusion

KINGFISHER

A Twelve-Month, Two-Arm, Randomized, Double-Masked, Multicenter Phase III Study Assessing the Efficacy and Safety of Brolucizumab vs. Aflibercept in Patients with Visual Impairment Due to Diabetic Macular Edema

COOG2

Collaborative Ocular Oncology Group Uveal Melanoma Validation Study Number 2 (COOG2)

BEARRD

Bevacizumab Against Recurrent Retinal Detachment



BARBARA A. BLODI, MD

PROFESSOR, MEDICAL DIRECTOR OF THE FUNDUS PHOTOGRAPH READING CENTER

SPECIALTIES

Retinal diseases including macular degeneration and diabetic retinopathy
uveitis, ocular immunology

LEADERSHIP POSITIONS

Member

AAO Examiner
Macula Society
Society of Heed Fellows
Vitreous Society
Women in Ophthalmology

GRANTS

DHHS, Public Health Services, NIH

SCORE2 Comparative Trial

Emmes Corporation

Age-Related Eye Disease Study 2 (AREDS2) Ten-Year Follow-On Study

Eyenuk, Inc.

Subcontract: Advanced Image Analysis Tools for Diabetic Retinopathy
Telemedicine Application

Genentech, Inc.

GX29176 a Phase III, Multicenter, Randomized, Double-Masked, Sham-Controlled Study to Assess the Efficacy and Safety of Lampalizumab Administered Intravitreally to Patients with Geographic Atrophy Secondary to Age Related Macular Degeneration

Omaspect

Individual Sow #GX29176 to the MSA between Genentech, Inc. and UW Multicenter, Open-Label Extension Study to Evaluate the Long-Term Safety Tolerability of Lampalizumab in Patients with GA Secondary to AMD Who Have Completed a Roche-Sponsored Study

George Washington University

Diabetes Prevention Program Outcomes Study (DPPOS)

TODAY2 Phase II (T2P2) : Long-Term Post-Intervention Follow-Up

Treatment Options for Type 2 Diabetes in Adolescents and Youth

TODAY2 Phase II

TODAY2 Phase II (T2P2) : Long-Term Post-Intervention Follow-Up

Year 2

Epidemiology of Diabetes Interventions and Complications Data Coordinating Center

Diabetes Prevention Program Outcomes Study (DPPOS) RPPR for Year 2 (Year 3 Budget)

Epidemiology of Diabetes in Interventions and Complications Color Supplement

Epidemiology of Diabetes Interventions and Complications Renewal

CLINICAL TRIALS

Mactel NTMT

A Phase II Multicenter Randomized Clinical Trial of Ciliary Neurotrophic Factor (CNTF) for Macular Telangiectasia Type 2 (MacTel).

ARIS

Longitudinal Study of Early AMD and Reticular Pseudodrusen

Gallego

A Phase II, Multicenter, Randomized, Single-Masked, Sham-Controlled Study to Assess Safety, Tolerability, and Efficacy of Intravitreal Injections of FHTR2163 in Patients with Geographic Atrophy Secondary to Age-Related Macular Degeneration (Gallego)

KEY:

AAO: American Academy of Ophthalmology

AAPOS: American Association for Pediatric Ophthalmology and Strabismus

ABO: American Board of Optometry

AMD: Age-Related Macular Degeneration

ARVO: The Association for Research in Vision and Ophthalmology

ASOPRS: American Society of Ophthalmic Plastic and Reconstructive Surgery

AUPO: Association of University Professors of Ophthalmology

DHHS: United States Department of Health and Human Services

DOVS: Department of Ophthalmology and Visual Sciences

NEI: National Eye Institute

NIH: National Institutes of Health

MERI: McPherson Eye Research Institute

UW SMPH: University of Wisconsin School of Medicine and Public Health

VA: Veteran's Administration

BIM2

Biomarker Identification for Anti-VEGF Resistance in Exudative AMD

AREDS2 Ten Year Follow Up

Age-Related Eye Disease Study 2 (AREDS2) Ten-Year Follow-On Study

ICONIC

A Phase II Randomized, Double-Masked, Multicenter, Active-Controlled Study Evaluating Administration of Repeated Intravitreal Doses of hi-con1 in Patients with Choroidal Neovascularization Secondary to Age-Related Macular Degeneration



YASMIN S. BRADFELD, MD

DR. JOHN DOOLITTLE PROFESSOR, OPHTHALMOLOGY AND VISUAL SCIENCES, CO-CHAIR INTERNATIONAL OPHTHALMOLOGY INITIATIVES

SPECIALTIES

Pediatric ophthalmology and strabismus

LEADERSHIP POSITIONS

Member

AAPOS

Food and Drug Administration Ocular Imaging Forum Speaker

International Program Organizer, Australia RANZCO Meeting

UW SMPH—Career Paths 101 and 201, Faculty Development Planning

GRANTS

Jaeb Center for Health Research

Pediatric Eye Disease Investigator Group: ATS5: A Randomized Trial to Evaluate 2 Hours of Daily Patching for Amblyopia in Children 3 to 7 Years Old

CLINICAL TRIALS

Pedig ATS20

Binocular Dig Rush Game Treatment for Amblyopia

Pedig IXT1

A Randomized Trial of Bilateral Lateral Rectus Recession versus Unilateral Lateral Rectus Recession with Medial Rectus Resection for Intermittent Exotropia

Anterior Segment Optical Coherence Tomography (AS-OCT)

Comparison of Ocular Anterior Segment Features Using the Anterior Segment OCT in Pediatric Patients with and without Glaucoma—A Pilot Study

ARTISAN

Clinical Study of the ARTISAN® Aphakia Lens in Children



CURTIS R. BRANDT, PHD, FARVO

UW MEDICAL FOUNDATION PROFESSOR OF OPHTHALMOLOGY AND VISUAL SCIENCES, VICE-CHAIR OF RESEARCH

SPECIALTIES

Virology, cell and molecular biology, genetic mapping and recombinant techniques, gene therapy

LEADERSHIP POSITIONS

Member

NIH, Drug Discovery and Resistance Mechanisms Study Section

GRANTS

Amebagone

Biological Treatment of Bacterial Keratitis

DHHS, Public Health Services, NIH

Core Grant for Vision Research

Neurovirulent HSV-1 Recombinants for VQTL Analysis

Retina Research Foundation

Gene Therapy for Retinal Degeneration Diseases



CAT N. BURKAT, MD, FACS

PROFESSOR, ASOPRS FELLOWSHIP FACULTY, CO-CHAIR INTERNATIONAL OPHTHALMOLOGY INITIATIVES

SPECIALTIES

Oculoplastic, facial cosmetic and orbital surgery

LEADERSHIP POSITIONS

American Society of Ophthalmic

Plastic and Reconstructive Surgery

Education Committee, Communications Committee, Incoming Program Chair – 4 year elected term; ASOPRS/AAO Joint Oculofacial Plastic Surgery Knowledge Center Editorial Board; Liaison Member for The National Examining Board of Ocularists; Liaison Chair for the World Ophthalmology Congress

American Academy of Ophthalmology

Eyewiki Eye Encyclopedia, Deputy-in-Chief; Skills Transfer Advisory Committee; Women in Ophthalmology and Ambassador Program Committee; Skills Transfer Courses, Director and Instructor Ophthalmology Champion, AUPO Minority Ophthalmology Mentoring Program

American Board of Ophthalmology

Oral Board Examiner; Mentor Examiner; Oculoplastics Exam Development Committee

National Memberships

American Society of Ocularists (ASO) Medical Board

Global Health Task Force, University of Wisconsin Graduate Medical Education

UW Health – Transformations Clinic and Surgery Center Operations Committee

Clinical and Research Faculty, continued...



JONATHAN S. CHANG, MD

ASSISTANT PROFESSOR

SPECIALTIES

Retina, vitreous, macula

CLINICAL TRIALS

ALTISSIMO

A Phase IIb Multicenter Dose-Ranging Study Evaluating the Safety and Efficacy of a Long-Acting Intravitreal

Sunitinib Malate Depot Formulation (GB-102) Compared to Intravitreal Aflibercept in Subjects with Neovascular (Wet) AMD

YOSEMITE

A Phase III, Multicenter, Randomized, Double-Masked, Active Comparator-Controlled Study to Evaluate the Efficacy and Safety of RO6867461 in Patients with Diabetic Macular Edema

SAPPHIRE

A Randomized, Masked, Controlled Trial to Study the Safety and Efficacy of Suprachoroidal CLS-TA in Conjunction with Intravitreal Aflibercept in Subjects with Retinal Vein Occlusion



YANJUN (JUDY) A. CHEN, MD, PHD

ASSISTANT PROFESSOR, NEURO-OPHTHALMOLOGY SERVICE CHIEF

SPECIALTY

Neuro-ophthalmology

LEADERSHIP POSITIONS

Member

ARVO

MERI

DOVS Quality Improvement Review Committee

American Association of Neurology

North American Neuro-Ophthalmology Society, Fellow

Upper Midwest Neuro-Ophthalmology Group

International Pupil Colloquium

CLINICAL TRIALS

SIGHT

Multicenter, Partially-Masked, Randomized, Controlled Study of Medical Therapy vs. Medical Therapy plus Optic Nerve Sheath Fenestration vs. Medical Therapy plus Stereotactic Ventriculoperitoneal Cerebrospinal Fluid Shunting in Subjects with Idiopathic Intracranial Hypertension and Moderate to Severe Visual Loss



KAREN J. CRUICKSHANKS, PHD

PROFESSOR

SPECIALTIES

Epidemiology of age-related ocular disorders, hearing loss, diabetes

LEADERSHIP POSITIONS

Chair

Data Monitoring and Oversight

Committee, Conservation of Hearing Study

Member

Duke Medical Center and Durham VA Geriatrics Research, Education and Clinical Center

External Advisory Board, Medical University of South Carolina Clinical Research Center for Experimental and Clinical Studies of Presbycusis
National Academies of Sciences, Engineering and Medicine (Institute of Medicine), Committee on Accessible and Affordable Hearing Health Care for Adults

UW SMPH—Institute for Clinical and Translational Research-Community-Academic Partnerships Pilot Awards 2016 Review Committee

UW SMPH Molecular and Environmental Toxicology Review Committee; MS and PhD Program; Research and Scientific Productivity Task Force; Search Committee

National Institute on Deafness and Other Communication Disorders Program Committee for the Sensory Impairment and Cognitive Decline Conference

UW—Madison Recruitment and Admissions Committee in Population Health

Director of the Wisconsin State Lab of Hygiene

GRANTS

DHHS, Public Health Services, NIH

Familial and Birth Cohort Effects on the Aging Senses

Epidemiology of Age-Related Hearing Loss Merit Submission



DAVID M. GAMM, MD, PHD

ASSOCIATE PROFESSOR, SANDRA LEMKE TROUT CHAIR IN EYE RESEARCH, RRF EMMETT A. HUMBLE DISTINGUISHED DIRECTOR OF MCPHERSON EYE RESEARCH INSTITUTE

SPECIALTIES

Pediatric ophthalmology and adult strabismus

LEADERSHIP POSITIONS

Member

AAO Fellow

AAPOS

ARVO

NEI Scientific Director Search Committee

Foundation Fighting Blindness-Canada Scientific Advisory Board

Foundation Fighting Blindness Scientific Advisory Board

Knights Templar Eye Foundation Scientific Advisory Council

Stem Cell Research Organization Committee

Scientific Advisory Board member, Waisman Biomanufacturing

Morgridge Institute for Research

American Ophthalmological Society

American Society for Clinical Investigation

Society of Heed Fellows

Wisconsin Academy of Ophthalmology

GRANTS

Children's Hospital of Philadelphia

Canine Retinal Disease Models for Translational Photoreceptor Regeneration

Choroideremia Research Foundation Canada

Elucidating the Function of Rep1 in Human Pluripotent Stem Cell-Derived RPE and Photoreceptor Cells

DHHS, Public Health Services, NIH

Mechanisms of Retinogenesis in Human Stem Cells

Johns Hopkins University

Screening for Molecules that Promote Photoreceptor Axon Guidance and Synaptogenesis

Massachusetts Eye and Ear Infirmary

The Pathogenesis of RNA Splicing Factor Retinitis Pigmentosa

Opis Therapeutics LLC

Preclinical Human Pluripotent Stem Cell Platelet-Rich Plasma Transplantation Studies

Reeves (Carl & Mildred Almen) Foundation

Reeves Foundation Equipment Grant 2018 Optical Coherence Tomography (OCT) Machine

Research to Prevent Blindness

Optimizing Cell Transplantation Strategies For Age-Related Macular Degeneration: Roles of Mitochondrial Integrity and Function in hiPS-RPE Survival

University of Iowa

Disease Mechanisms in Best Disease

University of North Carolina—Chapel Hill

Building IMPG2 Models Systems to Test Novel Therapeutics

University of Rochester

Accelerating Vision Restoration Through In-Vivo Cellular Imaging of Inner and Outer Retinal Function

**JUSTIN L. GOTTLIEB, MD***PROFESSOR, RETINA SERVICE CHIEF***SPECIALTIES**

Retina, vitreous, macula

LEADERSHIP POSITIONS**Member**American Society of Retina Specialist
Fellowship Education Committee,
Fellowship Standards Committee

AUPO Fellowship Compliance Committee

UW Hospitals - Operations Council Regional Subgroup

CLINICAL TRIALS**DRCRW**

Diabetic Retinopathy Clinical Research Network Agreement for New Protocol W Intravitreal Anti-VEGF Treatment for Prevention of Vision Threatening Diabetic Retinopathy in Eyes at High Risk

DRCRT

A Comparative Effectiveness Study of Intravitreal Aflibercept, Bevacizumab and Ranibizumab for Diabetic Macular Edema 5 Year Extension Study

DRCRV

Treatment for Central—Involved Diabetic Macular Edema in Eyes with Very Good Visual Acuity

**GREGG A. HEATLEY, MD, MMM***ASSOCIATE PROFESSOR, DIRECTOR OF QUALITY IMPROVEMENT REVIEW COMMITTEE, GLAUCOMA SERVICE CHIEF, GLAUCOMA FELLOWSHIP DIRECTOR***SPECIALTIES**

Glaucoma, anterior segment and cataract surgery

LEADERSHIP POSITIONS**University of Wisconsin Medical Foundation**

Finance; Operations; Patient Experience; Physician Coaches; Quality

University of Wisconsin Hospitals and Clinics

DOVS Clinical Operations Executive Committee Ethics; Operations Council; Ophthalmology Peer Review; Vice Chair for Quality Council

Member

ABO Oral Board Examiner

American Glaucoma Society Patient Advocacy Committee

Glaucoma Subspecialty Day Program Committee

**MRINALINI HOON, PHD***ASSISTANT PROFESSOR***SPECIALTIES**

Retina, vitreous, macula

LEADERSHIP POSITIONS**Member**

Neuroscience Training Program UW—Madison, Steering Committee

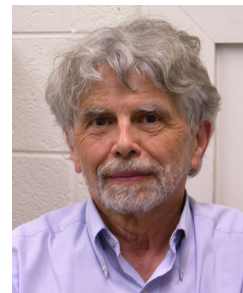
MERI

Research Financial Analysis Committee, DOVS

GRANTS

Retina Research Foundation

MERI Rebecca Meyer Brown Professorship

UW2020 WARF Discovery Initiative Award, Principal Investigator on the Round 5 Funded “*Imaging the third dimension at the nanometer resolution*” for the Acquisition of a Serial Block Face Scanning Electron Microscope as a Shared Instrumentation Facility on Campus**RONALD E. KALIL, PHD***PROFESSOR***SPECIALTIES**

Neural cell death and repair after brain damage

**MARILYN C. KAY, MD***ASSOCIATE PROFESSOR, VICE-CHAIR OF EDUCATION AND FACULTY DEVELOPMENT***SPECIALTY**

Neuro-ophthalmology

LEADERSHIP POSITIONS**Member**

ABO Associate Examiners

Fellowship

AAO

North American Neuro-ophthalmology Society

**BARBARA E. K. KLEIN, MD, MPH***PROFESSOR***SPECIALTIES**

Glaucoma, comprehensive ophthalmology, cataracts, diabetic retinopathy, epidemiology, preventive medicine

LEADERSHIP POSITIONS**Fellowship**

AAO

American College of Preventive Medicine

American College of Epidemiology

Member

American Public Health Association

Society of Epidemiologic Research

American College of Preventive Medicine

ARVO

American Epidemiological Society

American Glaucoma Society (Emeritus)

American Ophthalmological Society

International Genetic Epidemiology Society

American Society for Human Genetics

Ophthalmic Epidemiology Editorial Board

Clinical and Research Faculty, continued...



RONALD E. KLEIN, MD, MPH

PROFESSOR

SPECIALTIES

Vitreoretinal disease, diabetic retinopathy, age-related eye diseases, epidemiology

LEADERSHIP POSITIONS

Member

UW SMPH Graduate Student Advice

Population Health
Institute for Clinical and Translational Research Scientific Review Committee
Medical School Applicant Interviewers
UW–Madison Biological Sciences Tenure Review Committee

GRANTS

DHHS, Public Health Services, NIH

Epidemiology of Age-Related Macular Degeneration and Other Retinal Diseases

Extralenticular Aspects of Accommodation and Presbyopia

Juvenile Diabetes Research Foundation

Retinal Vessel Biomarkers for Risk Assessment of Incident Diabetic Complications in the Wisconsin Epidemiologic Study of Diabetic Retinopathy

National Opinion Research Center

Establish a Vision and Eye Health Surveillance System for the Nation



DANIEL W. KNOCH, MD

ASSOCIATE PROFESSOR, DIRECTOR OF MEDICAL STUDENT EDUCATION

SPECIALTIES

Comprehensive ophthalmology, cataract surgery

LEADERSHIP POSITIONS

Surgical and Procedural Care Block, Co-Director, Phase II

Ophthalmology Department UW SMPH ForWard Curriculum, Block Leader

AAO Medical Student Educators Website Committee Chair

Member

AUPO Medical Student Educators Council

Dean's Teaching Award Selection Committee

Association of Veterans Affairs Ophthalmologists



LAURA J. KOPPLIN, MD, PHD

ASSISTANT PROFESSOR

SPECIALTIES

Uveitis, inflammatory eye disease, immunosuppressive therapy, cataract surgery, comprehensive ophthalmology

LEADERSHIP POSITION

Member

Program Chair, Pacific Coast Oto-

Ophthalmological Society 2019 and 2020 Annual Meetings

CLINICAL TRIALS

FILGOTNIB

A Phase II, Randomized, Placebo-Controlled Trial Evaluating the Efficacy and Safety of Filgotinib in Subjects with Active Noninfectious Uveitis



JENNIFER C. LARSON, MD

ASSISTANT PROFESSOR

SPECIALTIES

Comprehensive ophthalmology, cataract surgery

LEADERSHIP POSITIONS

4th Year Medical Student Advisor

Open Globe Curriculum for Residents, Director

Ophthalmology Interest Group Advisor, DOVS



YAO LIU, MD, MS

ASSISTANT PROFESSOR

SPECIALTIES

Adult and pediatric glaucoma, cataract surgery, anterior segment surgery

LEADERSHIP POSITIONS

American Telemedicine Association

Ocular Telehealth Special Interest Group, Chair

American Glaucoma Society Research Committee Member

Prevent Blindness Scientific Committee Member

GRANTS

Centers for Disease Control and Prevention

U01 Establish a Vision and Eye Health Surveillance System for the Nation

American Glaucoma Society and Lions Eye Bank of Wisconsin Gift of Sight Discovery Fund

Macular Pigment and Glaucoma Incidence in the Carotenoids in Age-Related Eye Disease Study 2 (CAREDS2)

Wisconsin Public Service Commission

Telemedicine Grant for Mile Bluff Medical Center

DHHS, Public Health Services, NIH

Advancing Integration of Tele-Ophthalmology in Rural, Multi-Payer Health Systems



MARK J. LUCARELLI, MD, FACS

RICHARD K. DORTZBACH PROFESSOR OF OPHTHALMIC FACIAL PLASTIC SURGERY, OCULOPLASTICS SERVICE CHIEF, OCULOPLASTICS FELLOWSHIP DIRECTOR

SPECIALTIES

Oculoplastic, cosmetic and orbital surgery

LEADERSHIP POSITIONS

American Society of Ophthalmic Plastic and Reconstructive Surgery

President Elect; Executive Committee; Program Director's Committee; Education Committee; Oculofacial Plastic Surgery Online Knowledge Center, Editorial Board

Member

International Thyroid Eye Disease Society, Executive Board

AAO Practicing Ophthalmologists Curriculum Oculoplastics Panel, Member

North American Society of Academic Orbital Surgeons, Advisory Board

UW Health – University Station Eye Clinic Medical Director

Transformations Clinic and Surgery Center Operations Committee

CLINICAL TRIALS:

ASCEND GO 2

A Phase IIb, Multicenter, Randomized, Double-Blind, Placebo-Controlled Study of RVT-1401 for the Treatment of Patients with Active, Moderate to Severe Graves' Ophthalmopathy



JULIE A. MARES, PHD, MPH

PROFESSOR

SPECIALTIES

Epidemiology of eye disease, nutritional epidemiology

LEADERSHIP POSITIONS

Member

International Carotenoid Society Awards and Program Planning Committees

UW SMPH Institute for Clinical and Translational Research Scientific Review Committee; Tenure Promotions

UW–Madison Faculty Senate; Graduate Program in Nutritional Sciences Dissertations; Graduate Program in Population Health

GRANTS

Brigham and Women's Hospital

Cosmos-Eye Study–Subaward

DHHS, Public Health Services, NIH

Macular Pigment in Aging and Disease

State University of New York–Buffalo

AMD and Gut Microbiome Pilot Study

CLINICAL TRIALS

PLANT PIGMENTS

Influence of Lifelong Dietary Plant Pigments on their Density in the Macula and Vision Function: Pilot Studies



COLLEEN M. MCDOWELL, PHD

ASSISTANT PROFESSOR

SPECIALTIES

Glaucoma

LEADERSHIP POSITIONS

Member

DOVS, Faculty Senate Alternate

MERI Education Committee

International Society of Eye Research

ARVO Member-in-Training Committee



GILLIAN J. MCLELLAN, BVMS, PHD

ASSOCIATE PROFESSOR

SPECIALTIES

Glaucoma pathogenesis and identification of new therapeutic targets

LEADERSHIP POSITIONS

Member

American College of Veterinary Ophthalmologists

Vision for Animals Foundation, Board of Directors

Magrane Basic Science Course, Steering Committee Member

Editorial Board Member, Veterinary Ophthalmology (journal)

MERI Leadership Committee

Association for Research in Vision and Ophthalmology

Animals in Research Committee, Chair; Publications Subcommittee, Chair

Wisconsin Advanced Imaging of Visual Systems Lab

Faculty Planning Committee

UW SMPH/DOVS

Biomedical Research Model Services Faculty Advisory Committee;

Project Director: Shared Instrumentation for Multimodal Ophthalmic

Imaging; Research Financial Analysis Committee (DOVS)

GRANTS

NEI/NIH

Therapeutic Inhibition of Optic Nerve Head Gliosis and Fibrosis in

Glaucoma Rapalogue Therapy in Heritable and Vigabatrin-Induced

GABA Metabolic Disorders (Subaward)

Enhanced Backscattering Instrument for Assessing Optical Biomarkers of Glaucoma

BrightFocus Foundation

TGF- β and Glaucoma Progression in a Spontaneous Model

Marfan Foundation Early Investigator Grant

Delineating Pathology of the Aqueous Outflow Pathway in Animals with LTP2 Mutation

Vision for Animals Foundation—Resident Research Fund

Development and Validation of New Methods to Visualize Conventional Aqueous Outflow Pathways in Canine Glaucoma



ALEXANDER R. MIRANDA, MD

ASSISTANT PROFESSOR

SPECIALTIES

Pediatric and adult strabismus

LEADERSHIP POSITIONS

Member

Departmental Strategic Planning—

Building Centers of Innovation;

Executive Committee



MIHAI MITITELU, MD, MPH

ASSOCIATE PROFESSOR, MEDICAL DIRECTOR OF CLINICAL EYE RESEARCH UNIT

SPECIALTIES

Retinal vascular diseases, age-related macular degeneration, retinal dystrophies

CLINICAL TRIALS

ONS-5010

A Clinical Effectiveness, Multicenter, Randomized, Double-Masked, Controlled Study of the Efficacy and Safety of ONS-5010 In Subjects with Subfoveal Choroidal Neovascularization (CNV) Secondary to AMD

DERBY

A Phase III, Multi-Center, Randomized, Double-Masked, Sham-Controlled Study to Compare the Efficacy and Safety of Intravitreal APL-2 Therapy with Sham Injections in Patients with Geographic Atrophy (GA) Secondary to AMD

OAKS

A Phase III, Multi-Center, Randomized, Double-Masked, Sham-Controlled Study to Compare the Efficacy and Safety of Intravitreal APL-2 Therapy with Sham Injections in Patients with Geographic Atrophy (GA) Secondary to AMD

COPIVIN

A Pilot Study: Control of Pain in Intravitreal Injections Using Topical NSAIDs

Clinical and Research Faculty, continued...



ANNA C. MOMONT, MD

ASSISTANT PROFESSOR, ASSOCIATE
RESIDENCY DIRECTOR

SPECIALTIES

Glaucoma, anterior segment surgery,
optic nerve imaging

LEADERSHIP POSITION

DOVS Wellness Program, Co-Director



SARAH M. NEHLS, MD

ASSOCIATE PROFESSOR, CORNEA
SERVICE CHIEF, CORNEA FELLOWSHIP
DIRECTOR

SPECIALTIES

Refractive surgery, cornea and external
disease, cornea and cataract surgery,
uveitis

LEADERSHIP POSITIONS

American Board of Ophthalmology

Director; Panel Leader for Oral Boards Examination; Content Outline
Rating Committee; Cornea/External Specialist; Chair, Cornea
Exam Development; Chair, Refractive Surgery Exam Development;
Prop Captain, Oral Boards Examination; Career-Long Competence
Committee; ABO Representative at AAO Council

American Society of Cataract and Refractive Surgery

Refractive Surgery Clinical Committee

CLINICAL TRIALS

ZEDS

A Multicenter, Randomized, Double-Masked, Placebo-Controlled
Clinical Trial of Suppressive Valacyclovir for One Year in
Immunocompetent Study Participants with an Episode of Dendritiform
Epithelial Keratitis, Stromal Keratitis, Endothelial Keratitis, and/or
Iritis Due to Herpes Zoster Ophthalmicus (HZO) in the Year Prior to
Enrollment

SHP640

A Phase III, Multi-center, Randomized, Double-Masked Study to
Evaluate the Clinical Efficacy and Safety of SHP640 (PVP-Iodine 0.6%
and Dexamethasone 0.1%) Ophthalmic Suspension Compared to PVP-
Iodine and Placebo in the Treatment of Adenoviral Conjunctivitis



DONNA M. NEUMANN, PHD

ASSOCIATE PROFESSOR

SPECIALTIES

Epigenetic modifications regulating
ocular HSV-1 latency and reactivation

LEADERSHIP POSITIONS

NIH

Center for Scientific Review Special
Emphasis Panel – Cell Biology ZRG

CB-J (02) Study Section; Center for Scientific Review, HIV Co-Infections
and HIV-Associate Cancers Study Section

Member

MERI

Lions Eye Bank of Wisconsin, Gift of Sight Discovery Funds, Proposal
Reviewer

Women in Science – South Louisiana Chapter

American Society for Microbiology

American Society for Virology



ROBERT W. NICKELLS, PHD

PROFESSOR, FREDERICK A. DAVIS
CHAIR OF OPHTHALMOLOGY AND
VISUAL SCIENCES

SPECIALTIES

Molecular biology of cell death in
glaucoma and retinoblastoma

LEADERSHIP POSITIONS

Member

UW–Madison Faculty Senate

Bright Focus Foundation Scientific Advisory Board

Glaucoma Foundation Scientific Advisory Board

UW Principal Investigator – NIH/NEI Vision Research T32 Grant

GRANTS

DHHS, Public Health Services, NIH

Molecular Mechanisms of Retinal Ganglion Cell Death

University of Wisconsin-Madison Vision Research Training Program

University of Pittsburgh

A Comprehensive Approach to Whole Eye Transplantation: Building a
Scientific Foundation for New Therapies in Vision Restoration



T. MICHAEL NORK, MD, MS, FARVO

PROFESSOR

SPECIALTIES

Diseases and surgery of the retina and
vitreous

LEADERSHIP POSITIONS

Member

UW SMPH Human Proteomics Program
Advisory Board

Comparative Ophthalmic Research Laboratories (CORL), Managing
Member and Director

UW Hospital Clinical Policy Committee

Lions Eye Bank of Wisconsin Board of Directors,

Mantic, LLC, Co-Managing Member

Ocular Services on Demand, Co-Managing Member



HEATHER A. D. POTTER, MD

ASSOCIATE PROFESSOR, OCULAR
PATHOLOGY SERVICE CHIEF,
PATHOLOGY FELLOWSHIP DIRECTOR

SPECIALTIES

Comprehensive ophthalmology,
ophthalmic pathology

LEADERSHIP POSITIONS

Wisconsin Academy of Ophthalmology
Executive Committee President

American Association of Ophthalmic Oncologists and Pathologists
Nominating Committee Chair

Member

American Association of Ophthalmic Oncologists and Pathologists
Executive Committee

ABO Content Committee

AAO Knowledge Base Panel for Ophthalmic Pathology and Ocular
Oncology

UW Medical School Admissions Committee

Examiner for Oral Boards Examination for the ABO



SHILPA G. REDDY, MD

ASSISTANT PROFESSOR

SPECIALTY

Comprehensive ophthalmology

LEADERSHIP POSITIONS

DOVS Quality Improvement Review Committee
DOVS Wellness Program, Co-Director



PATRICIA C. SABB, MD

ASSISTANT PROFESSOR

SPECIALTIES

Comprehensive ophthalmology, cataract surgery, refractive surgery



STEPHEN K. SAUER, MD

ASSOCIATE PROFESSOR,
COMPREHENSIVE SERVICE CHIEF

SPECIALTIES

Comprehensive ophthalmology, cataract surgery

LEADERSHIP POSITIONS

Resident Wet Lab Curriculum Director
Member

DOVS Clinical Adjunct Faculty Committee
Chair Tenure Promotions Committee
AAO Practicing Ophthalmologist Curriculum Panel



MELANIE A. SCHMITT, MD

ASSISTANT PROFESSOR

SPECIALTIES

Pediatric ophthalmology and strabismus, ophthalmic genetics

LEADERSHIP POSITIONS

Co-Director of Ocular Genetics Program
Director of the Pediatric Inherited Retinal Degeneration Clinic

Director of Retinopathy of Prematurity services

AAPOS

Genetic Eye Disease Committee
Professional Education Committee

GRANTS

Vitreoretinal Surgery FDN
Vitreoretinal Surgery Foundation Fellow Grant Award

CLINICAL TRIALS

CHAMP

A 3-Arm Randomized, Double-Masked, Placebo-Controlled, Phase III Study of Atropine Sulfate Ophthalmic Solution 0.01% and 0.02%
Sub-Investigator: Nayan Patel



NADER SHEIBANI, PHD

PROFESSOR

SPECIALTIES

Diabetic retinopathy, retinopathy of prematurity, animal models and retinal vascular cell biology and signal transduction

LEADERSHIP POSITIONS

Member

UW-Madison Faculty Senate

UW SMPH Institutional Animal Care and Use Committee

MERI Research Committee

GRANTS

DHHS, Public Health Services, NIH

Novel Anti-Angiogenic Peptides for Treatment of Exudative AMD
CYP1B1 and Retinal Astrocyte Function

Northwestern University

Investigating Oxygen Metabolism in Diabetic Retinopathy

Pamdeca, LLC

Efficacy and Safety of the Short Synthetic Anti-Angiogenic Peptide to Treat Retinopathy of Prematurity

Research to Prevent Blindness

Targeting Metabolic Stress in Retinal Pericytes for Treatment of Diabetic Retinopathy



KIMBERLY E. STEPIEN, MD

ASSOCIATE PROFESSOR, CO-VICE
CHAIR OF CLINICAL AFFAIRS

SPECIALTIES

Retina, macula, inherited retinal degenerations

LEADERSHIP POSITIONS

Director of the Adult Inherited Retinal Degeneration Clinic

Co-Director of Ocular Genetics Program

CLINICAL TRIALS

CNGB3

A Multiple-Site, Phase 1/2, Safety and Efficacy Trial of a Recombinant Adeno-Associated Virus Vector Expressing CNGB3 (rAAV2tYF-PR1.7 hCNGB3) in Patients with Congenital Achromatopsia Caused by Mutations in the CNGB3 Gene

CNGA3

A Multiple-Site, Phase 1/2, Safety and Efficacy Trial of AGTC-402, a Recombinant Adeno-Associated Virus Vector Expressing CNGA3, in Patients with Congenital Achromatopsia Caused by Mutations in the CNGA3 Gene

IONIS

A Phase II, Randomized, Placebo-Controlled, Double-Masked Study to Assess Safety and Efficacy of Multiple Doses of IONIS-FB-LRX, an Antisense Inhibitor of Complement Factor B, in Patients with Geographic Atrophy Secondary to AMD

NIGHT

Natural History of the Progression of Choroideremia Study to Gain a Better Understanding of the Progression of Choroideremia and Add to the Knowledge Base for this Rare Disease

STAR

Evaluate the Efficacy and Safety of a Single Subretinal Injection of AAV2-REP1 in Subjects with Choroideremia. Patients Already Enrolled in the Night Study will be Screened to Qualify for the Gene Therapy Surgical Trial

Clinical and Research Faculty, continued...

XOLARIS

Gain a Better Understanding of Disease Progression Over Time in Subjects with X-Linked Retinitis Pigmentosa

SOLSTICE

A Long-term Follow-up Study to Evaluate the Safety and Efficacy of Retinal Gene Therapy in Subjects with Choroideremia Treated Previously with Adeno-Associated Viral Vector Encoding Rab Escort Protein 1 (AAV2-REP1) in an Antecedent Study

Inherited Ocular Disease Recruitment Registry

To Have an On-Site Repository of Potential Study Participants with Inherited Ocular Disease Available to Researchers Affiliated with the DOVS

Rate of Progression in EVS Related Retinal Degeneration (Pro-EVS)

The Overall Goal of this Project Funded by the Foundation Fighting Blindness is to Characterize the Natural History of Disease Progression in Patients with EVS Mutations in Order to Accelerate the Development of Outcome Measures for Clinical Trials

Quantitative Impacts of Artifacts in Optical Coherence Tomography Angiography Images

To Analyze Quality and Frequency of OCTA Artifacts and to Evaluate Their Impact on the Interpretability of OCTA Images



GARY W. STERKEN, MD

ASSISTANT PROFESSOR

SPECIALTIES

Comprehensive ophthalmology, cataract surgery, glaucoma

LEADERSHIP POSITIONS

Member

Mauston Physician Leader

UW SMPH Clinical Financial Analysis
Community Based Faculty Council



MICHAEL C. STRUCK, MD

PROFESSOR, PEDIATRIC FELLOWSHIP
DIRECTOR

SPECIALTIES

Pediatric ophthalmology and adult strabismus

LEADERSHIP POSITIONS

Eyesight 4 Kids, Director

Charity Medical Surgical Mission Team
for Central America, Physician Lead

Member

AAPOS

International Council of Ophthalmology

Clinical Health Sciences Promotion Committee

UW SMPH Tenure Track Faculty Promotions Committee

UW Hospitals and Clinics Pediatric Surgeons Working Group

UW Faculty Host for Pediatric Ophthalmology Visiting Observing Physicians

CLINICAL TRIALS

Corneal Endothelial Integrity

Evaluation of Corneal Endothelial Integrity in Post-Surgical Pediatric Cataract with Lens Implantation



JOHN E. TEMPRANO, MD

ASSOCIATE PROFESSOR

SPECIALTIES

Comprehensive ophthalmology, cataract surgery

LEADERSHIP POSITIONS

Member

Admissions Committee

UW Hospitals and Clinics, Operations
Committee for Madison Surgery Center



ANDREW T. THLIVERIS, MD, PHD

PROFESSOR, VICE CHAIR OF
RESIDENT EDUCATION, RESIDENCY
DIRECTOR, VETERAN'S AFFAIRS
SERVICE CHIEF

SPECIALTIES

Comprehensive ophthalmology,
cataracts, ocular genetics

LEADERSHIP POSITIONS

Member

Association of VA Ophthalmologists Board

VISN 12 Advanced Access Implementation Committee

UW Hospitals and Clinics Graduate Medical Education Strategic
Planning Committee

UW Hospitals and Clinics Graduate Medical Education Strategic
Planning Committee



SUZANNE W. VAN LINDINGHAM, MD

ASSISTANT PROFESSOR

SPECIALTIES

Oculoplastic, facial cosmetic and orbital surgery

LEADERSHIP POSITIONS

Member

AAO

American Medical Association

IRIS/SOURCE Registry Team

Sir Charles Bell Society

Wisconsin Society of Ophthalmic Plastic and Reconstructive Surgeons

BY THE NUMBERS



95+

PUBLICATIONS AND COUNTING, BETWEEN
OCTOBER 1, 2018 AND OCTOBER 1, 2019.



EVAN J. WARNER, MD

ASSISTANT PROFESSOR

SPECIALTIES

Cataract surgery, laser-assisted cataract surgery, astigmatism-correcting and multifocal lens implants, bladeless custom LASIK and PRK laser vision correction, cornea and external disease

LEADERSHIP POSITIONS

Member

Associate Medical Director of the Lions Eye Bank of Wisconsin, Madison
UW SMPH Medical School Admissions Interviewing Committee

CLINICAL TRIALS

oGVHD

A Phase III Randomized, Placebo-Controlled, Double-Masked, Multicenter, Safety and Efficacy Study of Brimonidine Tartrate Nanoemulsion Eye Drops in Patients with Ocular Graft-vs-Host Disease (oGVHD)



TERRI L. YOUNG, MD, MBA, FARVO

PETER A. DUEHR PROFESSOR OF OPHTHALMOLOGY, PEDIATRICS AND MEDICAL GENETICS, CHAIR, DEPARTMENT OF OPHTHALMOLOGY AND VISUAL SCIENCES, SERVICE CHIEF, PEDIATRIC OPHTHALMOLOGY AND ADULT STRABISMUS SERVICE

SPECIALTIES

Pediatric ophthalmology, adult strabismus, ophthalmic genetics

LEADERSHIP POSITIONS

University of Wisconsin School of Medicine and Public Health

Centennial Scholars Program Advisory Committee, Chair
Liaison Committee on Medical Education, Educational Resources Subcommittee, Co-Chair
Health Genomics/Precision Medicine Task Force and Director Search Committee

Executive Leadership in Academic Medicine Alumnae

Advisory Council for the Advancement of Women

Building Interdisciplinary Research Careers in Women's Health Planning Committee

University of Wisconsin–Madison

Women in Medicine and Science Committee, Consultant

Search Committee for Vice Chancellor for Research and Graduate Education

Outstanding Women of Color Award Selection Committee

Medical Foundation Board

University of Wisconsin Health System, Department Chair Representative

Strategic Facilities Planning Committee

Capitol Advisory Council

National/International Memberships

ABO Associate Examiner

NIH, Diseases and Pathophysiology of the Visual System Study Section Member

NEI, NIH Board of Scientific Counselors

International Joint Commission on Allied Health Personnel in Ophthalmology, AUPO Chair Representative

ARVO Women in Eye and Vision Research, Chair

International Joint Commission on Allied Health Personnel in Ophthalmology, Finance, Audit, and Investment Committee

ARVO Foundation Awards Committee

University of California at San Francisco Proctor External Advisory Board

ARVO Foundation Board of Governors

AUPO Task Force on Board Structure Consultant

Helen Keller Foundation Prize for Vision Research Selection Committee

Editorial Boards Memberships

Experimental Eye Research Journal

Investigative Ophthalmology and Visual Sciences Journal

CLINICAL TRIALS

Molecular Genetics of Myopia

Refractive Error Genomics

Clinical and Molecular Analysis of Genetic Eye Disorders

Gene Identification of Human Developmental Eye Disorders, with the Development of Transgenic Animal Models. Special Emphasis on Childhood Glaucoma Genetics

Pilot Study

Investigation of a Potential Association Between Perthes Disease and Glaucoma

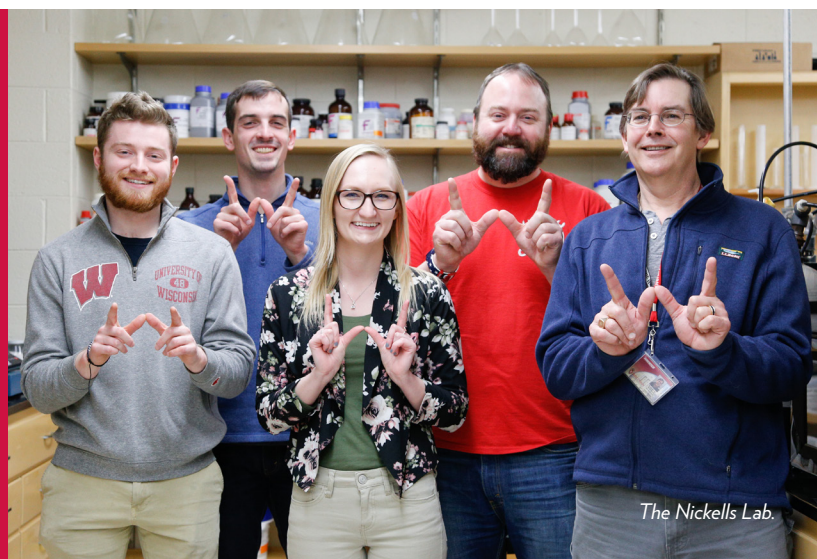
For emeritus faculty, please see page 50

BY THE NUMBERS



18TH

IN NATIONAL EYE INSTITUTE RANKINGS
FOR RESEARCH FUNDING.



The Nickells Lab.

OPTOMETRY FACULTY



Karina A. Conlin, OD
*Clinical Adjunct
Assistant Professor,
Clinical Optometrist*



Janet X. Cushing, OD
Clinical Optometrist



Celeste K. Jend, OD
Clinical Optometrist



Tracy A. Klein, OD
Clinical Optometrist



Kevin D. Kurt, OD
Clinical Optometrist



Michele M. Martin, OD
*Clinical Adjunct
Assistant Professor,
Optometry Service Chief,
Clinical Optometrist*



Sanbrita Mondal, OD
*Clinical Adjunct
Assistant Professor,
Clinical Optometrist, Low
Vision Clinic Director*
Sub-Investigator: Lighthouse
Guild Fund



Nayan R. Patel, OD
*Clinical Adjunct
Assistant Professor,
Clinical Optometrist,
Pediatric Optometrist*
Sub-Investigator: CHAMP
Clinical Trial



**Richard W.
Patterson, OD**
Clinical Optometrist



Kelsey L. Rickels, OD
*Clinical Optometrist,
Pediatric Optometrist*



**Amy L. Walker, OD,
MBA, FAAO**
*Co-Vice Chair of
Clinical Affairs, Clinical
Optometrist*

BY THE NUMBERS



115,998⁺

PATIENT
VISITS
IN 2019.

AMAZING ALUMNI

Alumni Association Updates



The UW–Madison Ophthalmology Alumni Association (OAA) continues to better serve past residents and fellows across the country. Established in 1990, the OAA encourages connections between the UW Department of Ophthalmology and Visual Sciences, its faculty and program alumni, including participation in international rotations, mentoring current learners and volunteering to support activities like the annual phacoemulsification course. One of the top priorities for the coming year is engaging alumni to return to Madison to celebrate the department’s upcoming 50th anniversary. This year the board added three new members, and appointed a new president, Timothy J. Daley, MD. Dr. Daley practices at Medical Associates in Dubuque, Iowa, and completed medical school (2007), residency (2011), and a pediatric and strabismus fellowship (2012) training at the University of Wisconsin–Madison.

Joining the alumni board of directors as at-large members are:



Alon Kahana, MD, PhD, is an associate professor of ophthalmology and visual sciences at the University of Michigan. He completed his residency in 2005 and his fellowship in Oculofacial Plastic and Reconstructive Surgery in 2007 at UW–Madison.



Ashley Lundin, MD, practices at Sanford Health in Bemidji, Minnesota. She completed her residency at UW–Madison in 2015.

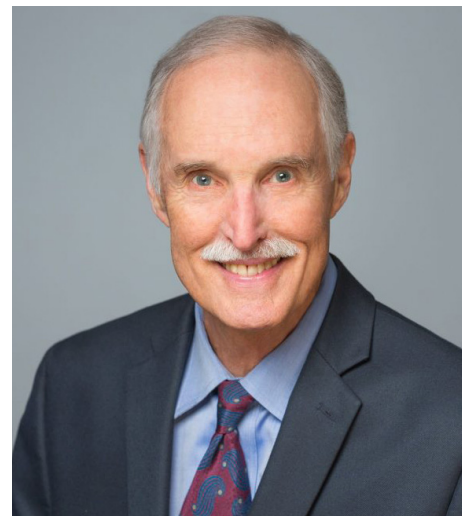


Alexander Ringeisen, MD, practices in the Twin Cities, Minnesota area with Vitreoretinal Surgery, PA. He completed his residency at UW–Madison in 2017.

Dr. Andy Harris Honored as 2019 AAO Distinguished Alumni Award Recipient

This year’s Distinguished Alumni Award recipient, Andy Harris, MD (Residency 1974), recalls his time at the University of Wisconsin Department of Ophthalmology and Visual Sciences (DOVS) fondly. Harris’ community and professional involvement resume is vast, and includes serving on boards and committees focused on human rights, homelessness, and environmental issues. He served as the national president of Physicians for Social Responsibility, an organization which received the 1985 Nobel Peace Prize.

Dr. Harris’ excellent work for the local to global good exemplifies the Wisconsin Idea. DOVS is proud to honor him with the 2019 Distinguished Alumni Award presented at the department’s Alumni and Friends Reception during the American Academy of Ophthalmology annual meeting on October 12, 2019.



VISITING PROFESSORS

V. Vinod Mootha, MD

University of Texas Southwestern
Medical Center

*"Window on Molecular Pathogenesis of
Fuchs' Endothelial Corneal Dystrophy"*
October 12, 2018

Jacque Duncan, MD

University of California, San Francisco
Matthew D. Davis Clinical Research

*Lecturer: "Retinal Structure and
Function in Patients with Retinal
Degenerations"*
October 19, 2018

David Antonetti, PhD

Kellogg Eye Center at the University of
Michigan

*Frontiers in Vision Research: "Blood-
Retinal Barrier Regulation In Diabetic
Retinopathy: New Insight And
Opportunities."*
March 28, 2019

**Monica Vetter, PhD, Chair of the
Department of Neurobiology and
Anatomy**

University of Utah

*Keynote Speaker, Kambara Vision
Science Symposium: "Microglia:
Dynamic Remodelers of the Developing
Retina"*
April 12, 2019

Michael G. Anderson, PhD

Carver College of Medicine at the
University of Iowa

*Kambara Vision Science Symposium:
"Using Quantitative Image Analysis to
Empower Mouse Studies of Glaucoma
and Retinal Ganglion Cell Biology"*
April 12, 2019

Amy Lee, PhD

Carver College of Medicine at the
University of Iowa

*Kambara Vision Science Symposium:
"Cav1.4 Ca²⁺ Channels at the
Photoreceptor Synapse"*
April 12, 2019

Katie M. Litts, PhD

Medical College of Wisconsin

*Kambara Vision Science Symposium:
"Application of AOSLO Retinal Imaging
in Achromatopsia"*
April 12, 2019

**Don Kikkawa, MD, FACS,
Professor and Chief of the
Division of Ophthalmic Plastic and
Reconstructive Surgery**

Shiley Eye Institute

"Precision Oculoplastic Surgery"
April 26, 2019

John Shepherd, MD

Director of The Weigel Williamson
Center for Low Vision, University of
Nebraska

*"Recognizing and Addressing
Depression in the Low Vision Patient"*
May 31, 2019

David M. Berson, PhD, Sidney

**A. Fox and Dorothea Doctors
Fox Professor of Ophthalmology
and Visual Science, Chair of
Neuroscience**

Brown University

*Frontiers in Vision Research: "Retinal
Circuits For Visual Reflexes"*
June 20, 2019

**Carol Karp, MD, Professor of
Ophthalmology, Richard K.
Forster Chair in Ophthalmology,**

Bascom Palmer Eye Institute

University of Miami Miller School of
Medicine

*"Update on the Management of Ocular
Surface Squamous Neoplasia"*
July 12, 2019

Amanda Maltry, MD

University of Minnesota

"Lessons in Leukocoria"
July 26, 2019

Valérie Biousse, MD, Cyrus

**H. Stoner Professorship in
Ophthalmology, Professor of
Ophthalmology and Neurology**

Emory University School of Medicine

"Ophthalmoscopy in the 21st Century"
and *"Is There a Treatment for Acute
Central Retinal Artery Occlusion?"*
September 6, 2019



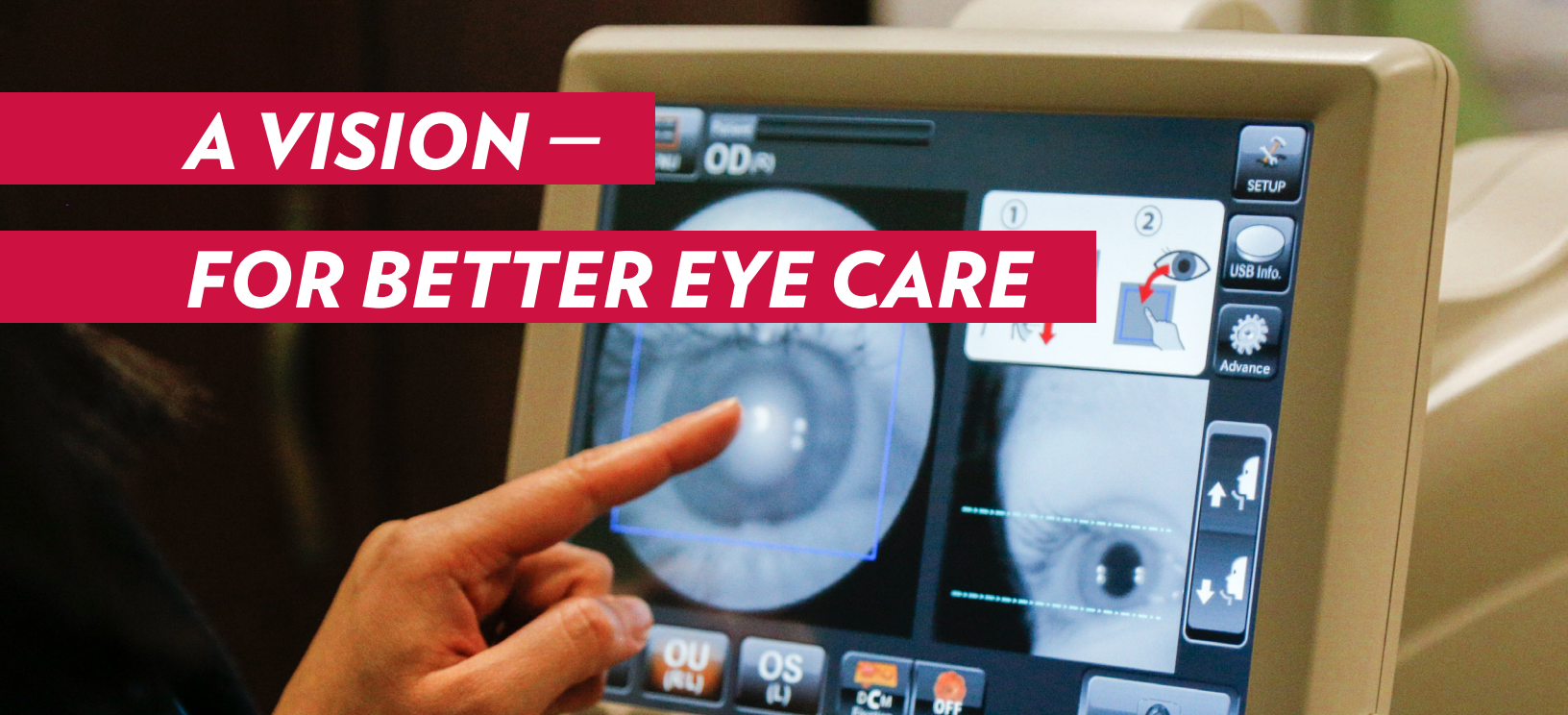
Monica Vetter, PhD, giving the keynote speech at
the Kambara Vision Science Symposium in April.

BY THE NUMBERS

⚡ 14/17

PRESENTERS AT THE ANNUAL KAMBARA VISION
SCIENCE SYMPOSIUM WERE FEMALE.

A VISION — FOR BETTER EYE CARE



Dr. Liu photographs a patient's eye for screening.

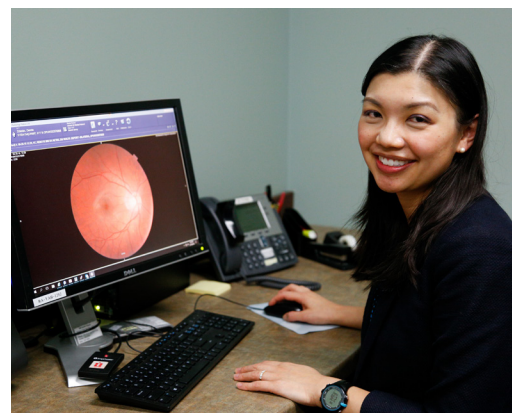
Teleophthalmology Increases Access in Rural Wisconsin

In August of 2018, the Department of Ophthalmology and Visual Sciences (DOVS) launched a teleophthalmology program in an effort to make diabetic eye examinations highly accessible to rural Wisconsin communities. Residents from these areas often need to travel far for a simple eye check. Long drives required for an in-person eye screening can pose many barriers to care, including time, money and post-exam inability to drive caused by possible eye dilation, according to David Hoffman, MD, a family and geriatric medicine practitioner at Mile Bluff Medical Center in Mauston, Wisconsin.

The DOVS Teleophthalmology Program makes remote diabetic eye screening possible for these patients. Yao Liu, MD, MS, assistant professor, is the director of the program.

“We are trying to use the Wisconsin idea, making it easier for people to get access to the care they need to protect their vision,” said Dr. Liu.

Trained technicians obtain photos of the eye with a remote camera. The images are then transmitted to DOVS ophthalmologists to screen for diabetic eye disease. Larry Miller, a retired truck driver, is an ophthalmology patient and part of the teleophthalmology program. Miller reflected, “[Teleophthalmology] would be good for everybody to make sure they get their eyes checked. The eyes are so important; it’s one of your senses. It doesn’t hurt to have a check to make sure that things are going okay.”



Dr. Liu examines a patient's eye scans for signs of diabetic retinopathy.

A landmark clinical study led by Matthew "Dinny" Davis, MD, at DOVS in the 1970s found that early detection and treatment can significantly prevent blindness for diabetes patients. The American Diabetes Association recommends yearly eye checks for people with diabetes. Teleophthalmology is useful for diagnosing other eye diseases including cataracts and glaucoma, in addition to making eye screening available and convenient for Wisconsin residents.

“I’ve often been told by patients that the reason they most want to protect their sight is to watch their children and their grandchildren grow up,” said Liu, “and I think making that possible is just an incredible privilege.”

NEW FACULTY & STAFF



LAURA J. KOPPLIN, MD, PHD

Dr. Kopplin joined the Department in July as a uveitis and comprehensive ophthalmology specialist. She received her MD and PhD degrees from Case Western Reserve University School of Medicine in Cleveland, Ohio. Dr. Kopplin's research interests include novel therapeutic agents in uveitis treatment, and epidemiological and clinical outcomes in patients with inflammatory eye disease.

Dr. Kopplin was previously affiliated with the Medical College of Wisconsin Eye Institute, where she practiced uveitis, ocular immunology, and comprehensive ophthalmology. She now serves patients at the UW Health University Station and East Eye Clinics.



KEVIN D. KURT, OD

Dr. Kurt joined UW Health Eye Clinics as a clinical optometrist in September. He earned his doctorate degree in optometry from The Ohio State University in Columbus, Ohio. Prior to joining the Department, Dr. Kurt was the clinical director for pre- and post-operative care for laser vision correction procedures at TLC Laser Eye Center in Madison, Wisconsin.

Dr. Kurt practices at UW Health University Station Eye Clinic, where he provides adult and pediatric primary eye care and urgent care services.



COLLEEN M. MCDOWELL, PHD

Dr. McDowell began her faculty appointment with the Department as a glaucoma researcher in March. Dr. McDowell earned a PhD in molecular physiology and biophysics from the University of Iowa in Iowa City, Iowa. Previously, Dr. McDowell was a faculty member in the Department of Pharmacology and Neuroscience at the North Texas Eye Research Institute at the University of North Texas Health Science Center in Fort Worth, Texas.

The McDowell Lab is based in the Medical Sciences Center, and focuses on molecular pathways involved in the development of elevated intraocular pressure and glaucomatous trabecular meshwork damage.



ALEXANDER R. MIRANDA, MD

Dr. Miranda joined the Department's clinical faculty as a pediatric ophthalmology and adult strabismus specialist in August. He earned his MD at Case Western Reserve University School of Medicine in Cleveland, Ohio. Dr. Miranda finished his pediatric ophthalmology and adult strabismus fellowship at the Kellogg Eye Center at the University of Michigan in Ann Arbor, Michigan.

Dr. Miranda practices at both the UW Health University Station and East Eye Clinics.



DONNA M. NEUMANN, PHD

Dr. Neumann joined the Department's research faculty in January as a virologist. She earned a PhD in organic chemistry from the University of New Orleans in New Orleans, Louisiana, and later moved into the field of virology as a post-doctoral fellow at the Department of Ophthalmology at the Louisiana State University Health Sciences Center.

The Neumann Lab, based in the Medical Sciences Center, studies epigenetic modifications regulating ocular herpes simplex virus type 1 latency and reactivation.



KELSEY L. RICKELS, OD

Dr. Rickels joined UW Health Eye Clinics as a clinical optometrist in October 2018. Dr. Rickels earned a doctorate degree in optometry from the Southern California College of Optometry in Fullerton, California. Dr. Rickels was a clinical optometrist at Group Health Cooperative of South Central Wisconsin in Fitchburg, Wisconsin, before joining the Department.

Dr. Rickels staffs our urgent care clinic and practices pediatric optometry at the UW Health Madison Eye Associates Clinic.



SUZANNE W. VAN LANDINGHAM, MD

Dr. van Landingham joined the Department's clinical faculty in September on the plastic and reconstructive surgery service. She earned her MD from Johns Hopkins University School of Medicine in Baltimore, Maryland. Most recently, Dr. van Landingham completed an ophthalmic plastic and reconstructive surgery fellowship at UW-Madison. Her scientific interests include the impact of vision loss on physical function and using clinical "big data" to inform vision research.

Dr. van Landingham cares for patients at three UW Health locations: University Station Eye Clinic, Transformations, and Rockford Eye Clinic.

BY THE NUMBERS



\$9.4⁺ MILLION

IN TOTAL RESEARCH GRANT AND CONTRACT FUNDING.

RESIDENTS, FELLOWS, POSTDOCTORAL & GRADUATE STUDENTS

CLASS OF 2020



Braden Burckhard, MD

Dr. Braden Burckhard earned his Bachelor of Arts degree in Biology and Chemistry at Minot State University in Minot, ND. Dr. Burckhard received his medical degree from the University of North Dakota, Grand Forks, ND.



Meisha Raven, DO

Dr. Meisha Raven earned her Bachelor of Sciences in Biomedical Science from Grand Valley State University in Allendale, MI. Dr. Raven received her medical degree from A.T. Still University in Mesa, AZ, and her Ocular Pathology Fellowship at UW–Madison.



Alana Trotter, MD

Dr. Alana Trotter earned her Bachelor of Science degree in Biology and Afro-American Studies at UW–Madison. Dr. Trotter received her medical degree from the Medical College of Wisconsin in Milwaukee, WI.

CLASS OF 2021



Elaine Downie, MD

Dr. Elaine Downie earned her Bachelor of Arts in Chemistry at Carleton College in Northfield, MN. Dr. Downie received her medical degree from the University of Minnesota Medical School in Minneapolis, MN.



Jacob Evans, MD

Dr. Jacob Evans earned his Bachelor of Science in Neuroscience at Brigham Young University, Provo, UT. He received his medical degree from the University of Iowa Carver College of Medicine in Iowa City, IA.



Maxwell Wingelaar, MD

Dr. Maxwell Wingelaar earned his Bachelor of Science in Biomedical Science from Grand Valley State University in Allendale, MI. He received his medical degree from Michigan State University College of Human Medicine in Grand Rapids, MI.

CLASS OF 2022



Tyler Boulter, MD

Dr. Tyler Boulter earned his medical degree from Texas A&M College of Medicine in Bryan, TX. He completed an internship in internal medicine at Riverside Community Hospital in Riverside, CA.



Paige Richards, MD

Dr. Paige Richards earned her medical degree from Michigan State University College of Human Medicine in Grand Rapids, MI. Dr. Richards completed her internal medicine internship at Spectrum Health in Grand Rapids, MI.



Kenneth Taylor, MD

Dr. Kenneth Taylor joins us from the United States Air Force (Columbus Air Force Base), where he served as a flight surgeon from 2015–2019. Prior to that, he earned his medical degree from Emory University in Atlanta, GA, and completed an internship in internal medicine at the University of Texas Southwestern Medical Center in Dallas, TX.

CLASS OF 2023



Katherine Dalzotto, MD

Dr. Katherine Dalzotto earned her medical degree from Case Western Reserve University School of Medicine in Cleveland, OH.



Chintan Pathak, MD

Dr. Chintan Pathak earned his medical degree from Northwestern University Feinberg School of Medicine in Chicago, IL.



William Van De Car, MD

Dr. William Van De Car earned his medical degree from Michigan State University College of Human Medicine in Grand Rapids, MI.

CLINICAL FELLOWS



Kyla Aschenbeck, MD

Dr. Kyla Aschenbeck, cornea, external disease and refractive surgery fellow, completed her ophthalmology residency at Louisiana State University Health-Shreveport in Shreveport, LA.

Study Area: Cornea



Jaclyn Gurwin, MD

Dr. Jaclyn Gurwin, oculofacial and reconstructive surgery fellow, will be with DOVS for a two-year program. She completed her ophthalmology residency at the Scheie Eye Institute Penn Presbyterian Medical Center in Philadelphia, PA.

Study Area: Oculoplastics



Colin McInnis, MD

Dr. Colin McInnis, glaucoma fellow, completed his ophthalmology residency at the University of Arizona College of Medicine in Tucson, AZ.

Study Area: Glaucoma



Joseph "Jamie" Raevis, MD

Dr. Joseph "Jamie" Raevis, vitreoretinal surgery fellow, completed his ophthalmology residency at the State University of New York Downstate Medical Center in Brooklyn, NY.

Study Area: Retina



Kathleen Regan, MD

Dr. Kathleen Regan, second-year retina fellow, completed her ophthalmology residency training at the University of Florida in Gainesville, FL.

Study Area: Retina

PRE-RESIDENCY OCULAR IMAGING FELLOWS



Spencer Cleland, MD

Dr. Spencer Cleland serves in the Fundus Photograph Reading Center as a pre-residency ocular imaging/ocular pathology fellow.



Tyler Etheridge, MD

Dr. Tyler Etheridge serves in the Fundus Photograph Reading Center team as a pre-residency ocular imaging fellow.

POSTDOCTORAL STUDENTS

Pankaj Singh

Research Associate

Advisor: Donna Neumann, PhD

Kara Vogel

T32 Vision Research Trainee, Post-Doctoral Researcher

Advisor: Gillian McLellan, BVMS, PhD

GRADUATE STUDENTS

Ryan Donahue

T32 Vision Research Trainee

Program: Molecular and Cellular Pathology

Advisor: Robert Nickells, PhD

Juliana Falero Perez

Program: Environmental Toxicology

Advisor: Nader Sheibani, PhD

Thomas Lawler, MS, RD

Program: Nutritional Sciences

Advisor: Julie Mares, PhD, MSPH

Steven Mayerl

Program: Pathology

Advisor: David Gamm, MD, PhD

Kazuya Oikawa, DVM

Program: Comparative Biomedical Sciences—Vet School

Advisor: Gillian McLellan, BVMS, PhD

Sarah Rempel

Program: Neuroscience

Advisor: Timothy Gomez, PhD

Abhilash Sawant, MS

Program: Physiology

Advisor: Mrinalini Hoon, PhD

Yong-Seok Song

Program: Environmental Toxicology

Advisor: Nader Sheibani, PhD

BY THE NUMBERS



12TH

IN THE NATION FOR "BEST CLINICAL CARE"
BY THE OPHTHALMOLOGY TIMES.

**Ophthalmology Times, 2019*

A NEW WAY OF IMAGING

Making WAIVS

One of the most exciting new projects in vision research at UW–Madison is a groundbreaking group collaboration among the Department of Ophthalmology and Visual Sciences (DOVS), McPherson Eye Research Institute (MERI), and other UW and national partners. The Wisconsin Advanced Imaging of Visual Systems (WAIVS) Lab, founded in 2018, promises to establish and advance exciting new eye imaging techniques at UW–Madison.



Page through any science magazine, and you'll be amazed at the image quality that is attainable by today's equipment—whether of distant galaxies or within the human body. Imaging techniques developed in recent decades and used to image the eye and retina, such as Optical Coherence Tomography (OCT), have advanced both patient care and basic research immensely. It is a paradox, though, that the more we see, the more we realize how much more there is to see. For instance, we now have the ability to view images of living photoreceptor cells with better clarity than ever before; however, we are only at the starting line when it comes to peering within those cells and understanding the functional relationships of the various cell components. Understanding those relationships is vital to fighting disease and devising better therapies.

The WAIVS project brings together a group of outstanding engineers, basic science researchers, and clinicians who are building an imaging lab featuring an Adaptive Optics (AO) platform. AO is a recently-developed method of eliminating aberrations in images by using dynamic mirrors that correct distortion. The same technology has been used widely in astronomy for improving images from telescopes. WAIVS will have two Adaptive Optics Scanning Laser Ophthalmoscope (AOSLO) machines housed within MERI space at the Wisconsin Institutes for Medical Research (WIMR). One machine will be used for clinical research, allowing researchers and clinicians to understand retinal dysfunction on a cellular level in living patients, and also to monitor cellular responses to treatments such as stem cell and gene therapies. In a separate, but nearby space, the other AOSLO machine will be used for building and testing innovative new features for the existing technology that will allow us to “see further.” Having the two machines in close proximity will allow for rapid application of imaging breakthroughs.

WHAT CAN WE SEE WITH ADAPTIVE OPTICS?

OCT, as shown in images A-C, has become an invaluable tool for clinical imaging of healthy or diseased retina and provides 3D volumetric images that can then be inspected from different angles. At top, panels B and C are cross sections corresponding to the dashed lines in panel A. Despite the clear value of OCT imaging, resolution of OCT remains limited due to imperfections in the lens, cornea, and tear film of the subject. AO solves this limitation, providing “fine focus” with cellular resolution as shown in panel D that corresponds to the tiny square in panel A. Even with this resolution, cells can be difficult to visualize using standard confocal contrast. State-of-the-art AOSLO systems such as the one under development

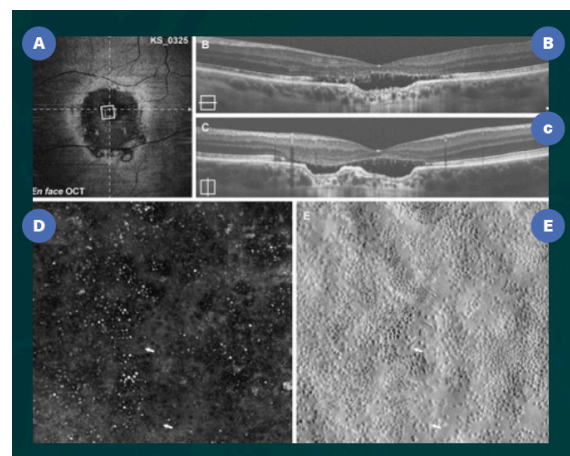


Image adapted from “Photoreceptor Inner Segment Morphology in Best Vitelliform Macular Dystrophy,” *Retina*. 2017 Apr; 37(4): 741–748.

at UW–Madison include additional split-detector capabilities as shown in panel E to improve contrast and visualization of photoreceptors. In this image, it is possible to see the abnormal morphology of most photoreceptor cells.

TO BETTER UNDERSTAND WAIVS, WE'D LIKE YOU TO MEET SOME OF ITS TEAM MEMBERS.

Jeremy Rogers, MS, PhD (Biomedical Engineering), is the principal UW–Madison investigator responsible for the fabrication and innovation of the AOSLO machines, which are being housed within his lab space in WIMR. He will also oversee advancements in parallel technologies that need to grow with improvements in AOSLO capabilities. With experience in multiple advanced imaging techniques, Dr. Rogers aims to advance AOSLO and other eye and retinal imaging systems to make them as effective as possible.

Alfredo Dubra, PhD (Ophthalmology, Stanford University), and Joseph Carroll, PhD (Ophthalmology, Medical College of Wisconsin), have been at the forefront of building and applying AOSLO technology from its inception, and will collaborate closely in its installation and use at UW–Madison. These AOSLO systems are extraordinarily delicate and will be constructed on vibration isolation optical tables using a combination of custom-made and off-the-shelf equipment. Drs. Dubra and Carroll will train the UW–Madison team and serve in integral roles on the WAIVS team.

Kimberly Stepien, MD (DOVS), will direct the use of AOSLO equipment in investigating human ocular diseases, including macular degeneration and inherited retinal conditions such as retinitis pigmentosa. Of great importance is the development of techniques to monitor the effectiveness of new therapeutic approaches, such as gene and stem cell-based therapies, that will be developed and tested at UW–Madison in coming years.



Benjamin Sajdak, PhD, Kimberly Stepien, MD and Jeremy Rogers, MS, PhD evaluating sensors that will improve accuracy and produce clearer images.

Barbara Blodi, MD (DOVS), will oversee the interface between the WAIVS Lab and the Fundus Photograph Reading Center (FPRC), a unit of the DOVS that is world-renowned for its expertise in retinal imaging analysis. The FPRC will help develop standardized AO imaging and grading protocols for image analysis. This is necessary in order for data to be correlated across AO research projects and with other imaging methods.

David Gamm, MD, PhD (DOVS), will focus on the potential uses of AOSLO imaging in clinical trials for stem cell-based therapies to treat age-related macular degeneration and retinitis pigmentosa.

These researchers are a subset of those working to build the WAIVS lab. Others include Kevin Eliceiri, PhD (Medical Physics; Morgridge Institute for Research; associate director of the McPherson Eye Research Institute), Gillian McLellan, BVMS, PhD (DOVS; School of Veterinary Medicine), and Melissa Skala, PhD (Biomedical Engineering; Morgridge Institute for Research). It is truly a cross-campus team whose common goal is to bring state-of-the-art ophthalmic imaging to UW–Madison and combine it with our formidable know-how to make it even more informative and—ultimately—more beneficial to patients.

RARE EYE CONDITION

REVEALED BY GENETIC TEST



Dave Seamans and his family dog at home.

Living on a big hill several miles west of Baraboo, Wisconsin, Dave Seamans loves being outdoors. Even something like chopping firewood is hardly a chore to Dave. When nightfall comes, he often finds himself gazing at the stars—or at least he used to, before he gradually, and inexplicably, lost his vision over a 12-year period.

By 2018, Dave could barely see a pinpoint of light. He had been legally blind for three years due to optic neuropathy in both eyes. His body also felt like it was falling apart, and his unexplained collection of symptoms—including numbness in his limbs and difficulty walking—puzzled many physicians.

“My symptoms mimicked those of someone with multiple sclerosis,” Dave says, “but I tested negative for MS.”

A 51-year-old U.S. Air Force veteran, Dave was not only depressed, but incredibly frustrated. He couldn’t get an answer to a simple question: Why is this happening?

“I couldn’t see. My hands and feet were going numb all the time. I needed a cane or walker and I was dropping stuff all the time,” Dave says. “I just felt like I was breaking down.”

Dave Meets With UW Genetic Counselor

In May 2018, thanks to a referral from his primary care doctor, Dave saw Elizabeth Kellom, MS, CGC, a University of Wisconsin genetic counselor at the Waisman Center Medical Genetics Clinic in Madison for genetic screening for optic neuropathy.

“I took Dave’s complete medical and family history,” says Elizabeth. “I initially suspected he might have late-onset Krabbe Disease, a rare and often deadly neurological disorder, because Dave had a niece who died of it.”

Ultimately, Elizabeth suggested Dave undergo whole exome sequencing—a comprehensive genetic examination of his DNA, the hereditary material in humans and almost all organisms.

With merely a swab from the inside of his cheek (followed by a 6-week wait for results), the test would show whether any mutations, or abnormal changes, were present in Dave’s DNA that might explain his medical predicament. Insurance did not cover the test, but Dave agreed to pay for it out of pocket, which, in his case, cost more than \$1,000.

Diagnosis Confirmed: Biotinidase Deficiency

The results pointed Elizabeth in the right direction. One more enzyme test confirmed that Dave had a rare genetic disorder called biotinidase deficiency, which occurs in about 1 in 60,000 people.

“Virtually all of us,” says Elizabeth, “have an enzyme called biotinidase, which helps our bodies recycle a B-vitamin known as biotin, which we need for our metabolism to function properly. If you can’t recycle biotin,” she says, “you typically suffer from a variety of debilitating symptoms.”

“Years ago—before biotinidase deficiency was even identified—babies who lacked biotinidase typically presented with severe neurological problems, including seizures and developmental delay, and sometimes eye problems or hearing loss,” says Elizabeth. Some of these children did not survive.

“Today, however,” Elizabeth says, “every baby across the country is tested for biotinidase deficiency as part of newborn screening. If a baby tests positive, he or she is given biotin supplementation, which is taken for life. If treated right away, the symptoms never even show up.”

Screening Test Didn't Exist When Dave Was Born

Dave, unfortunately, was born too early to have his condition picked up in infancy. It was not until 1982 that a medical geneticist named Barry Wolf, MD, first identified biotinidase deficiency and not until many years later that newborns in every state were tested for it.

“At age 51, Dave is the oldest known living patient with biotinidase deficiency,” says Dr. Wolf, emeritus chair of medical genetics at Henry Ford Hospital in Detroit and currently professor of Genetics, Birth defects and Metabolic Disease at Lurie Children’s Hospital in Chicago.

Dr. Wolf doesn’t know why Dave and his brother, Wayne—who also tested positive but did not lose his vision—escaped the symptoms of biotinidase deficiency as children.

“One theory is that drinking as much milk as they did while growing up kept the symptoms at bay for many years.”

Since biotin supplementation is the standard treatment for infants who test positive for biotinidase deficiency, Elizabeth—in consultation with UW medical geneticist Greg Rice, MD—encouraged Dave to try it himself.

“Since Dave lived with this condition for 50 years,” Elizabeth says, “I could not promise that biotin supplementation would help him the way it helps newborns, yet I knew he had nothing to lose.”

In early July 2018—just two weeks after picking up a jar of biotin at Costco—the man who grew up staring at constellations of stars literally could not believe his own eyes.

A Miracle: Dave Sees Again

“Before taking biotin, I might be able to see one star if I’m lucky,” Dave says. “Two weeks later, I looked up one night and saw the whole big dipper. I couldn’t stop bawling my eyes out.”

Dave could hardly believe what he saw, and when he told Elizabeth, she could hardly believe what she heard.

“The whole Genetics Department at the Waisman Center was buzzing,” she says. “In our field, a diagnosis helps people manage their condition. Rarely can we use our findings to literally change someone’s life like Dave’s.”

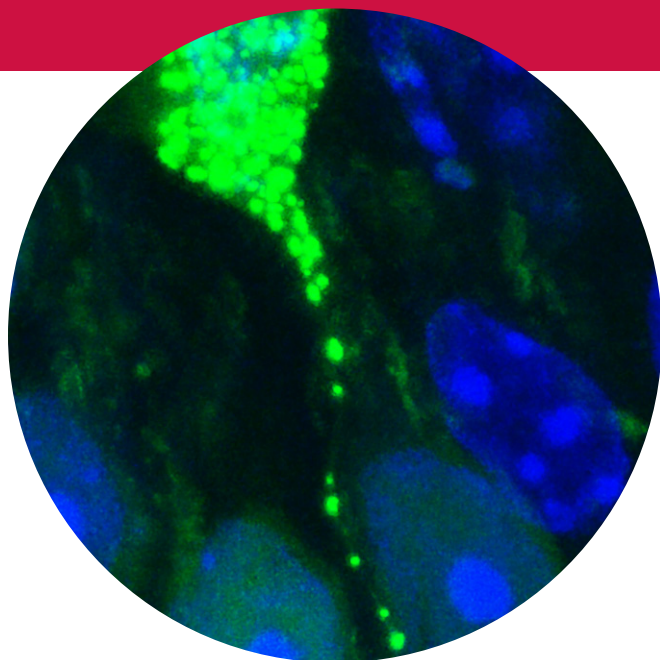
Kimberly Stepien, MD, a UW Health ophthalmologist and director of the Adult Inherited Retinal Disease Clinic, said Dave’s case beautifully illustrates the power of genetic testing.

“Elizabeth is the true hero in this story,” says Dr. Stepien. “She took the time to get a very thorough history and understood that we needed more than standard genetic optic neuropathy screening. Of course, Dave’s willingness to pay for the whole exome sequencing was also critical.”

At the same time, Dr. Stepien cautions people with poor vision not to run to the pharmacy for biotin supplements too quickly.

...continued on page 47

TRAINING TODAY FOR TOMORROW'S DISCOVERY



Beginning in January 2019, three students—one postdoctoral and two pre-doctoral—engaged in the first integrated training program of Department of Ophthalmology and Visual Sciences (DOVS) that is dedicated to the visual sciences.

The University of Wisconsin Vision Research Training Curriculum (VRTC), where Ryan J. Donahue, PhD Candidate; Sarah K. Rempel, PhD Candidate; and Kara Vogel, PhD, are trainees, was established last year to implement the DOVS' first T32 grant from the National Eye Institute, National Institutes of Health (NEI/NIH). VRTC selects its trainees through a competitive process that focuses on new technologies and discovery.

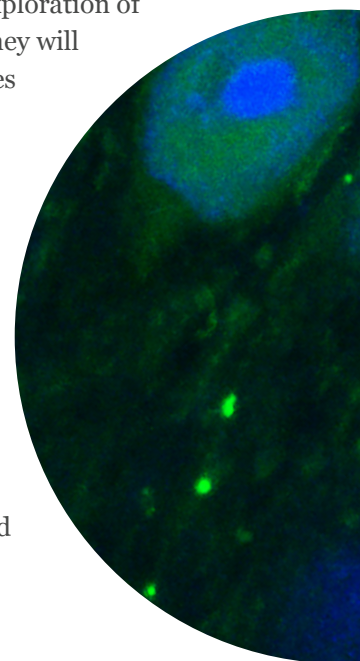
The Vision Research Training Curriculum focuses on development and diseases of the anterior segment, developmental diseases of the posterior

segment, ocular epidemiology and genetics and higher order visual processing. Faculty include researchers not only from the DOVS but from across campus, including Engineering, Computer Science, Neuroscience, Psychology, Pathology, Population Health and Veterinary Medicine. Most are connected through membership in the McPherson Eye Research Institute. These faculty will support the training of two graduate students and one postdoctoral student every one to two years, over the next five years.

“This program offers outstanding students an opportunity to learn from faculty who are working at the cutting edge of vision science. We are able to immerse our students completely in their chosen field and also help them develop the skills they will need to have productive vision research careers.”

— Robert Nickells, PhD, VARC Director

Students are now engaged in a robust program focused on the understanding and exploration of the visual system and its diseases. They will participate in discussions and lectures ranging from the molecular and cell biology of the photo-transduction pathway (the process that converts light into a neurological signal), to the networks of neuronal connections in the retina and the brain, to the clinical management of major ophthalmic diseases. As part of this curriculum, students will complete a comprehensive course titled, “Ocular Diseases of the Mammalian Visual System,” expected to be approved for January 2020.





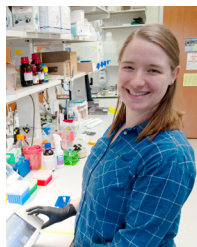
**Ryan J. Donahue, PhD
Candidate**

*T32 Vision Research Trainee,
Research Assistant, Nickells
Lab*

Trainer: Robert Nickells, PhD,
Professor, DOVS

**Research Focus: Development and Diseases
of the Anterior Segment**

Looking at the molecular pathology of neurodegenerative disease, Ryan's project focuses on understanding temporal dynamics of retinal ganglion cell commitment to apoptosis in the optic nerve crush model.



**Sarah K. Rempel, Research
Assistant, PhD Candidate**

*T32 Vision Research Trainee,
Gomez Lab*

Trainer: Timothy Gomez, PhD,
Department of Neuroscience

**Research Focus: Development and Diseases
of the Posterior Segment**

Sarah is interested in understanding how human stem cell-derived photoreceptors extend axons in vitro and in situ in 3D retinal organoids. These cells are promising candidates for cell transplant therapies to cure blindness caused by diseases such as cone/rod dystrophies and age-related macular degeneration. By understanding how human photoreceptors develop in vitro and in organoids, she hopes to better understand aspects of normal human retinal development and to better inform transplant therapies.



Kara Vogel, PhD

*T32 Vision Research Trainee,
Post-Doctoral Researcher,
Department of Neuroscience,
McLellan Lab*

Trainer: Gillian McLellan, PhD,
BVMS, Associate Professor,

School of Veterinary Medicine

**Research Focus: Development and Diseases
of the Posterior Segment**

Kara is investigating the role of cytoskeletal dynamics in the process of synaptic plasticity. For example, how does the architecture along the neuron's dendritic length and spiny protrusions develop and change dynamically after neurotransmitter stimulation? Furthermore, how does this correlate to dynamic aspects of cytoskeletal function? Synaptic plasticity is fundamental to higher cognitive processes such as learning and memory, and loss of integrity of this system correlates to neurodegeneration and disease. She studies the dynamic interaction of microtubules, actin, associated proteins and cargos with high-resolution microscopic techniques, such as the laser scanning confocal microscope.



At left, Robert Nickells, PhD, is the director of the VRTC, at right, co-director, David Gamm, MD, PhD.

INTERNATIONAL OPHTHALMOLOGY

ADVANCES



Dr. R. Chris Bowen observing a patient screening test at a rural outreach clinic in New Delhi, India.

Looking Back

Our Ophthalmology Residency Training Program celebrates its fourth year of a 2-week off-site rotation for senior residents to Dr. Shroff's Charity Eye Hospital in New Delhi, India. Since its establishment in 2015, 14 residents have participated in the multi-dimensional experience that involves extracapsular cataract surgical training, tailored clinical exposure to subspecialty clinics in ophthalmology, patient screening in a rural outreach facility, educational conferences and exchanges, and cultural immersion.

Senior residents Drs. R. Chris Bowen, Nathan Mathews, and Chris Spearman were accompanied by the Department of Ophthalmology and Visual Sciences (DOVS) Chair, Dr. Terri Young, MD, MBA, FARVO, and traveled to India in February of 2019. According to Dr. Young, "I was impressed by the deep level of commitment to service that the doctors have at Shroff's, and how they relate to their patients with graciousness and humility." Dr. Shroff's Charity Eye Hospital serves the greater New Delhi community. It is also involved in eye care work in other areas of India, and in Botswana in partnership with the Madison non-profit Combat Blindness International, which was founded by UW–Madison professor emeritus, Dr. Suresh Chandra.

The DOVS International Ophthalmology Initiative (IOI) welcomed its third international ophthalmology resident from the University of São Paulo (USP), Brazil, Dr. Ana Letícia Darcia. Dr. Darcia performed a retrospective research study on non-surgical treatments for pediatric cataract under the DOVS faculty sponsorship of Dr. Michael Struck. Dr. Darcia investigated the treatment protocol of pre-verbal/non-verbal children with cataracts by visual testing to determine the need for surgical intervention. Traditionally, the trigger for implementing surgical care is primarily based on the morphologic features of the cataract alone. In addition to her research contributions, Dr. Darcia observed patient care in the clinic with and the operating room with faculty members, and participated in resident training didactic lectures during her five-week program.

In May 2019, USP ophthalmology resident Dr. Thaisa Silveira Barbosa and DOVS principle investigator Dr. Yasmin Bradfield successfully published an article in the Ophthalmology Glaucoma Journal titled, "Comparative Intraoperative Anterior Segment OCT Findings in Pediatric Patients With and Without Glaucoma." Research contributions were made while Dr. Barbosa rotated at DOVS in fall of 2018.

UW–Madison DOVS second-year ophthalmology resident Dr. Braden Burckhard was recognized by the Philippines Commission on Filipinos Overseas, for his contributions to underserved Filipinos during the 236th Tzu Chi Foundation Medical Mission in Tacloban City, Philippines. Dr. Burckhard spent one week with DOVS partners at the University of Santo Tomas, Cardinal Santos Medical Center and Tzu Chi Eye Center in Manila, Philippines as a part of the newly established bilateral partnership.

UW Medical student Vimal Konduri participated in a 10-week UW School of Medicine and Public Health Shapiro Summer Research Program at Dr. Shroff's Charity Eye Hospital, India. While abroad, he performed research on the efficacy of their Certified Ophthalmic Paramedic Program (COP). The COP program trains young women to become mid-level professionals and perform similar functions to traditional ophthalmologists. Mentored by IOI Co-Chair Dr. Cat Burkat, Vimal reflected, "This was a great learning experience, mentorship program and career exploration."

"The Department of Ophthalmology and Visual Sciences has had a long tradition of global partnership. As co-director of International Ophthalmology Initiatives, I envision strengthening our partnerships with existing and new collaborations among international institutions. Our goals include advancements in patient eye and surgical care, research, and education curriculum development. I am excited to work with our international partners to achieve these goals!"



— Dr. Yasmin Bradfield, Co-Chair of DOVS International Ophthalmology Initiatives

Looking Forward

DOVS will support its fifth annual India resident training rotation at Dr. Shroff's Charity Eye Hospital where three senior residents, a current retina fellow, and a glaucoma fellowship alumna and faculty will travel to New Delhi and participate in patient care and teaching activities.

In the spring of 2020, DOVS will welcome University of Santo Tomas partner, Dr. Cathy Macaraig, for a three-day collaborative visit and Grand Round presentation. Ophthalmology resident Dr. Elaine Downie will join partners in Manila, Philippines, for a one-week rotation focusing on indigent care. Support for this partnership comes from the Guillermo and Marta de Venecia Fund, which was established to continue the de Venecia's commitment to indigent care, faculty training and collaborations with academic medical centers in the Philippines.

From left to right: Dr. Braden Burckhard post-operative with patient during the Tzu Chi Foundation's 236th Medical Mission in Tacloban City, Philippines; Drs. Ana Letícia Darcia and Michael Struck during an appointment; Drs. Terri Young, Nathan Mathews, Chris Spearman, and Randy (Chris) Bowen with partners during the Dr. Shroff's Charity Eye Hospital Rotation in 2019.



A NEW WAY TO WAIT

Innovative, Cloud-Based Technology Dramatically Reduces Patient Wait Times

Long patient wait times, miscommunication about which patient should be seen next or patients getting “lost” as they progress through different stops of their appointment, is stressful for patients, doctors and staff. That’s why the Department of Ophthalmology and Visual Sciences implemented eSynchrony. With this visual communication tool, doctors, staff and technicians in a fast-paced clinic can nonverbally track patients by visually moving them through the steps of the process as they are being treated on a central screen. The large touch screen is located in a common area and is simultaneously accessible on desktop computers in other areas.



Darla Coullard, ophthalmic assistant, using the eSynchrony board.

The software visually shows on a monitor where patients are currently located and exactly how long they have been in each step of the appointment process. If a backup in patient flow is forming, resources can be allocated immediately to alleviate the bottleneck.

“The best feature about the eSynchrony board is that at one glance, I know whether my clinic is running on time, which patients are waiting for me and where my staff members are,” says Dr. Yasmin Bradfield. “One glance gives me a live snapshot of my entire clinic in real time.”

“I can immediately see which patients are waiting for me and rearrange the sequence of patients, so I can see those who have been waiting the longest or who will have shorter appointments sooner,” Bradfield explains.

Builds Teamwork

The eSynchrony board improves teamwork in clinics because it allows everyone to help improve the patient experience throughout the clinic.

“The eSynchrony board forces us all to think about what the other people are doing and how it is affecting the whole patient experience,” Kristin Anderson, orthoptist at UW Health, says. “Before, we only focused on finishing our own responsibilities. Once we handed patients off, we moved on.”

Added Patient Appointments

“Implementing eSynchrony is extremely helpful if there are multiple steps in the patient’s journey through their clinical appointment,” Dr. Kimberly Stepien of UW Health says. “Using the board helps to create a team approach in the clinic toward patient care because everyone knows the status of the clinic and can help where needed, which reduces patient wait time.”

Streamlining patient flow has allowed her to add clients to her clinics.

“For example, we used to struggle to see 17 people in a half day, but now I can comfortably see 20 people in a half day, and our patient satisfaction has gone up,” says Dr. Stepien.

...continued on page 47

CLINICAL EYE RESEARCH UNIT

UW–Madison Department of Ophthalmology and Visual Sciences (DOVS) has been, and continues to be, at the forefront of translational vision research. The Clinical Eye Research Unit (CERU) is inextricably linked to this success, providing DOVS researchers the administrative infrastructure to perform clinical trials for patients with various eye disorders.

Clinical trials in vision research, sponsored by the National Eye Institute, a division of the National Institutes of Health, have led to new medications, supplements and methods for disease detection and treatments that have saved or improved the eyesight of millions of people. The CERU has been involved with many of these clinical trials including, but not limited to AREDS, AREDS2, SCORE, SCORE2, DRCRnet trials, PEDIG pediatric ophthalmology trials, CAPT, and CATT. Many of these trials revealed important data in discovering safe and effective treatments for eye diseases and vision loss.

While CERU serves as the clinical research arm for the DOVS, their mandate allows for collaboration on any study where medications given for a patient's initial indication can affect the eye. Because of this, CERU is frequently involved in clinical trials initiated by other departments within the UW–Madison School of Medicine and Public Health, as well as schools throughout the UW–Madison campus. This campus-wide academic research model, along with relationships with UW Hospital and Carbone Cancer Center, has resulted in CERU's involvement in collaborative projects that extend beyond the scope of DOVS.

CERU is a self-sufficient unit that provides its own imaging and diagnostics for most ophthalmology trial needs, including anterior and posterior pole imaging, visual field testing and electrophysiology. CERU staff and providers have years of experience and a strong tradition of involvement in clinical trials, ranging from original, investigator-initiated projects (involving trainees and faculty) to major nationwide trials in phases I through IV.

The CERU team collaborates with doctors, staff, campus partners, and research sponsors to foresee the needs of those living with ophthalmic diseases. We strive to provide sight-saving prevention and treatment solutions.

CERU staff are Certified Clinical Research Coordinators with the Association of Clinical Research Professionals. Areas of expertise include, but are not limited to, technical assessments and direct patient care, patient education and advocacy, data collection and management, and regulatory compliance.



The Clinical Eye Research Unit Team: Nickie Stangel, Angie Adler, Kristine Dietzman, Dr. Mihai Mititelu, Jennie Perry-Raymond, Christopher Smith, and Bonnie Verges.

CLINICAL EYE RESEARCH UNIT TEAM

Mihai Mititelu, MD, MPH

Associate Professor, Medical Director of Clinical Eye Research Unit

Jennie Perry-Raymond

Clinical Trials Administrator

Angie Adler

Study Coordinator and Regulatory Specialist

Bonnie Verges

Research Technician and Photographer

Kristine Dietzman

Study Coordinator

Christopher Smith

Study Coordinator and Photographer

Nickie Stangel

Study Coordinator

Kelly Boyd

Study Coordinator

Brianna Miller

Regulatory/Quality Assurance Specialist

PUBLICATIONS

The Department of Ophthalmology and Visual Sciences is proud to be a leader among our peer institutions in publication output year after year. Our success is the result of collaborations with one another, across campus and all over the world on everything from age-related macular degeneration to gene therapies. The list below represents all peer-reviewed publications from September 15, 2018 through October 1, 2019.

AGE-RELATED MACULAR DEGENERATION

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IN PUBLICATION PRODUCTIVITY IN
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RARE EYE CONDITION REVEALED BY GENETIC TEST

...continued from page 35

A Cautionary Note

“People can experience vision loss from a variety of conditions including diseases such as macular degeneration or diabetic retinopathy,” she says, “and sadly, biotin supplement is not going to help those patients.”

Still, she will never forget Dave Seamans and his remarkable turnaround.

“It was amazing to see how his visual fields, along with his other systemic symptoms, improved over the next few months after he started his

supplements. It’s an ophthalmologist’s dream to help someone see again. It’s what gets us up in the morning every day.”

A Short but Sweet Note

Dr. Barry Wolf, the 72-year-old medical genetics pioneer who first identified biotinidase deficiency 37 years ago, cherishes the friendship he has cultivated with Dave over the past two years.

“Dave sent me a note last year that means more to me than he’ll ever know,” says Dr. Wolf. “I pull it out whenever I need a little boost.”

Short and sweet, Dave’s note reads as follows:

“Dr. Wolf—Six months ago, I was legally blind. Now I am driving. Your life’s work has saved my life. My family and I are eternally grateful. Dave.”

A NEW WAY TO WAIT

...continued from page 40

Patient experience is, after all, a crucial piece of the puzzle. “Our patient satisfaction has gone up dramatically,” Darla Coullard, ophthalmic assistant and office coordinator in Dr. Bradfield’s clinic, says. “We are now consistently getting nines and tens on our patient exit surveys on a 10-point scale. The board is helping us to take better care of our patients and reduce their wait times.”

In Dr. Bradfield’s words, using the board to manage patient times “helps our overall clinic to run more efficiently and helps me to provide solutions for delays and potential areas of patient dissatisfaction. Using eSynchrony improves the patient experience in our clinic, which is the bottom line for us.”

Problems Solved with Real-Time Data

The data that is collected for every clinic also allows doctors and staff to review the patient experience and identify opportunities for continuous process improvement.

“From an administrative standpoint, I like to look at the data at the end of the day to see where our wait times were and how we can improve them,” says Gary Lukes, ophthalmology supervisor at UW Health. “By brainstorming how to reduce wait times, we should be able to see more patients in the future. This is important to our patients because our specialists are booked three months out and comprehensives are booked almost a year out.”

Dr. Terri Young, department chair of ophthalmology, also uses the patient data to improve clinic processes. “Using the real-time data that is collected allows us to use the metrics to analyze where the bottlenecks are and determine how to prevent them, eliminate waste in the system for patients and improve the patient’s overall experience,” says Dr. Young.

According to Young, the data is also allowing her front line staff to solve problems and come to the table with solutions.

“The staff is now problem solving and proposing changes,” Young said. “It gives everyone ownership and an equal part in the process, and it creates a sense of, ‘What can I do to help?’”

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Many thanks to the generous donors who help advance vision research and support training the next generation of eye surgeons and researchers. This list represents gifts to the Department of Ophthalmology and Visual Sciences between July 1, 2018 and June 30, 2019.

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My gift to the Global Health Institute reaches people and places I've seen in my travels. And my gift to the textile collection is an extension of a lifelong interest. The Foundation helped me focus my legacy on the things that match my interests.

Sandy Winder '61

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