

INSIGHTS 2022



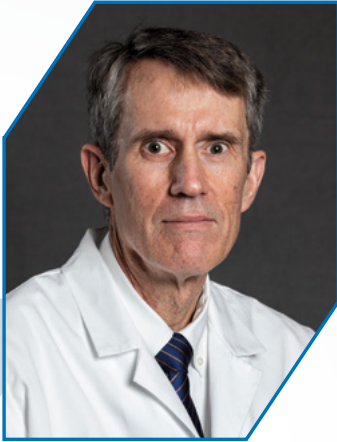
 WVUEyeInstitute

 West Virginia University
DEPARTMENT OF OPHTHALMOLOGY
AND VISUAL SCIENCES

CONTENTS

1	Chairman's Letter	.....
2	Faculty	.....
6	Residency	.....
10	Fellowship	.....
12	Students	.....
14	Alumni	.....
15	Research	.....
20	Clinical	.....
22	Outreach	.....
26	Publications	.....
28	Research Grants	.....
32	Donors	.....

Like most years, 2022 has been full of unexpected challenges and opportunities.



THOMAS MAUGER, M.D.
Professor and Jane McDermott
Shott Chair, Department of
Ophthalmology and Visual Sciences

Like most years, 2022 has been full of unexpected challenges and opportunities.

Throughout the course of this year, the West Virginia University Department of Ophthalmology and Visual Sciences and the WVU Eye Institute have continued to flourish and grow. I hope you will enjoy reading about some of our faculty, staff, trainees and their accomplishments in the following pages.

You will learn about our residency program, including our current chief resident, Jamie Dietze, M.D. Bradley Thuro, M.D., was named residency program director at the beginning of the Fall 2022 Semester after serving as the associate residency program director for several years. As program director, Dr. Thuro has been instrumental in expanding the Department's simulation lab, which added a new EyeSi surgical simulator and Alcon operating microscope this year. Both of these pieces of equipment are used by residents to hone their surgical skills and build their confidence prior to entering the operating room.

Thuro has taken over the reins as residency program director from Geoffrey Bradford, M.D., who retains his role as the vice-chair of education. In this role, Dr. Bradford works closely with WVU medical students who are interested in exploring the field of ophthalmology and leads

workshops and learning sessions with the WVU School of Medicine's Ophthalmology Interest Group.

You will also learn about the four fellowship programs we offer, including the Cornea Fellowship Program, which was started by Lingo Lai, M.D., in 2019.

A profile of WVU School of Medicine and Department of Ophthalmology and Visual Sciences Residency Program alumnus Larry Schwab, M.D., details his life experience in helping others both locally in West Virginia during his years of service as a faculty member for the Department, and worldwide in Africa through his involvement in the International Eye Foundation. His dedication to giving is an inspiration to us all, and he remains a positive and energetic presence on campus. He even returned to participate in the WVU PEP Band after a pause of 38 years while he was busy with his medical mission in Africa.

West Virginia University has been the recent recipient of a Visual Sciences Center of Biomedical Research Excellence (CoBRE) Grant led by Visvanathan Ramamurthy, Ph.D. Dr. Ramamurthy serves as the chairman of the Department of Biochemistry and Molecular Medicine and the vice-chair of research for the Department of Ophthalmology and Visual Sciences. This funding will not only elevate vision research in our department, but the entire university as well.

Project leaders supported by the CoBRE grant include Sadie Bergeron, Ph.D., an assistant professor for the Department of Biology, Michael Robichaux, Ph.D., an assistant professor for the Department of Ophthalmology and Visual Sciences and the Department of Biochemistry and Molecular Medicine and Joel Palko, M.D., an assistant professor for the Department of Ophthalmology and Visual Sciences. This funding will allow us to study the causes of visual loss in West Virginia and develop

“As we close the door on 2022, we look forward to 2023 and all the exciting opportunities it brings for our department.”

THOMAS MAUGER, M.D

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FACULTY

treatment strategies to reduce the impact of blinding eye disease at a statewide level.

Finally, Becky Coakley and her outreach team continue to provide vision care and compassion to areas of great need in West Virginia. She and her team have developed the Children's Vision Rehabilitation Program (CVRP). This program has been in existence for more than 25 years and currently serves as the longest-running advocacy program for blind and visually-impaired children in the United States. In 2022, Coakley and her team continued to work collaboratively with teachers and other vision specialists in the state to evaluate and offer aid to children who are blind and visually-impaired so that they can successfully achieve their goals and go on to live independent lives.

As we close the door on 2022, we look forward to 2023 and all the exciting opportunities it brings for our department. This summer, we will once again be saying goodbye to another talented class of residents and fellows as they graduate and depart to proudly represent West Virginia University and the Department of Ophthalmology and Visual Sciences in various roles across the country. We will also be welcoming in a new class of hospital

interns to our residency program as PGY-1 residents and new fellows to our cornea, glaucoma, vitreoretinal and ophthalmic plastic and reconstructive surgery fellowship programs. Members of our department will also be gathering in San Francisco in the fall to attend AAO 2023, the American Academy of Ophthalmology's 127th annual meeting. During AAO 2023, WVU Department of Ophthalmology and Visual Sciences faculty, residents, fellows and alumni will gather for a special reception to connect with friends, colleagues and mentors. We hope you enjoy learning about our accomplishments for 2022 and look forward to doing the same in the year to come.

Sincerely,



Thomas Mauger, M.D.

*Professor and Jane McDermott Shott Chair,
Department of Ophthalmology and Visual Sciences*

FACULTY

C Clinical Faculty **R** Research Faculty



**ANAHITA
AMIRESKANDARI M.D.**
Assistant Professor



**GEOFFREY
BRADFORD M.D., M.S.**
Professor, Director of Medical Student
Education, Vice-Chair of Education



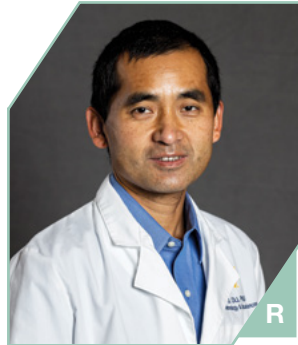
**JUDIE
CHARLTON M.D.**
Professor



**SOMYA
CHOWDHARY M.D.**
Assistant Professor



WEN TAO DENG PH.D.
Assistant Professor | Additional Appointment: Asst. Professor, Dept. of Biochemistry and Molecular Medicine



JIANHAI DU PH.D.
Associate Professor | Additional Appointment: Assoc. Professor, Dept. of Biochemistry and Molecular Medicine



BRIAN ELLIS M.D.
Associate Professor



GHASSAN GHORAYEB M.D.
Associate Professor, Vitreoretinal Fellowship Director, Vitreoretinal Division Director, Vice-Chair of Clinical Affairs



JORDAN GJOLBERG O.D.
Assistant Professor



KEVIN HALENDA M.D.
Assistant Professor



MARYAM HEKMATARA PH.D.
Postdoctoral Research Assistant – Du Lab



ALISON HIXENBAUGH O.D.
Assistant Professor



PRAVEEN JEYASEELAN M.D., MBBS
Assistant Professor



SARAVANAN KOLANDAIVELU PH.D.
Assistant Professor | Additional Appointment: Asst. Professor, Dept. of Biochemistry and Molecular Medicine



LINGO LAI M.D.
Assistant Professor, Cornea Fellowship Director



L. CAROL LAXSON M.D., PH.D.
Assistant Professor, Diabetic Retinopathy Program Director

FACULTY

C Clinical Faculty

R Research Faculty



GRACE LEVY-CLARKE M.D.
Associate Professor



MONIQUE LEYS M.D., EBO
Professor



THOMAS MAUGER M.D.
Jane McDermott Shott Chair, Professor,
Assoc. Dean for Practice Plan Integration,
Assoc. CMO for Ambulatory Care



RYAN MCGUIRE M.D.
Assistant Professor, Pediatric Division
Director



BRIAN MCMILLAN M.D.
Associate Professor, Associate
Glaucoma Fellowship Director,
Anterior Segment Director



CHARLES MOORE M.D.
Assistant Professor, Medical Director



BRITTANY NEWMAN O.D.
Assistant Professor



JOHN NGUYEN M.D.
Professor, Ophthalmic Plastic
and Reconstructive Surgery
Fellowship Director



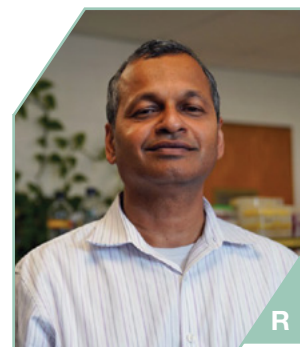
J. VERNON ODOM PH.D.
Professor | Additional Appointment:
Professor, Department of
Neuroscience



JOEL PALKO M.D.
Assistant Professor



NICOLE PUMARIEGA M.D.
Assistant Professor



VISVANATHAN RAMAMURTHY PH.D.
Professor, Vice Chair of Research |
Additional Appointments: Chair, Prof., Dept.
of Biochemistry and Molecular Medicine



**TONY
REALINI M.D., MPH**

Professor, Glaucoma Fellowship
Director, Vice Chair for Clinical
Research



**SAMINATHAN
REMEEMY PH.D.**

Postdoctoral Research Assistant –
Kolandaivelu Lab



**MICHAEL
ROBICHAUX PH.D.**

Assistant Professor | Additional
Appointment: Asst. Professor, Dept. of
Biochemistry and Molecular Medicine



**EZEQUIEL
SALIDO M.D., PH.D.**

Research Assistant Professor | Additional
Appointment: Research Asst. Professor, Dept.
of Biochemistry and Molecular Medicine



**EMILY
SECREST PH.D.**

Postdoctoral Research Assistant –
Deng Lab



**MONA
SINGH M.D., MPA**

Assistant Professor



**MAXIM
SOKOLOV PH.D.**

Professor | Additional Appointments:
Professor, Dept. of Biochemistry
and Molecular Medicine; Professor,
Dept. of Neuroscience; Professor,
Rockefeller Neuroscience Institute



**BRADLEY
THURO M.D.**

Assistant Professor, Residency
Program Director



**EBRU
TOKER M.D.**

Research Associate Professor



**HASAN
UL BANNA PH.D.**

Postdoctoral Research Assistant –
Palko Lab

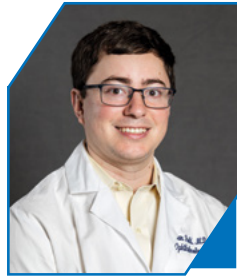
RESIDENTS



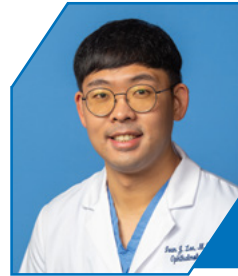
MICHAEL
CHANG M.D.



JAMIE
DIETZE M.D.

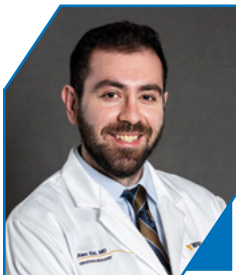


EVAN
FIELD M.D.



IVAN
LEE M.D.

PGY
4



ALEN
EID M.D.



EVAN
FRIGOLETTO M.D.



JORDAN
GUFFEY M.D.



CLINTON
JORDAN M.D.

PGY
3



ANDREW
BEITER M.D.



PARKER
CAIN M.D.



APRIL
ENGER M.D.



AMI
PATEL M.D.

PGY
2

DEENA
DAHSHAN M.D.

YONAH
LEVY M.D.

MICHAEL
SHI M.D.

SANYA
YADAV M.D.

PGY
1



Training the Next Generation of Ophthalmologists Through Residency

The West Virginia University Department of Ophthalmology and Visual Sciences offers a three-year residency program, with a joint transitional internship program at the WVU Eye Institute in Morgantown, W.Va.

The program accepts four residents per year from approximately 500 medical student applications. Of the 500 applicants, the committee selects a total of 50 candidates to interview in the fall. The matching process occurs in the winter, bringing four new residents to WVU each year. Residents begin their training in July, initially as hospital interns through the joint transitional year program, before transitioning to full-time residents in ophthalmology for the next three years of their training.

The joint transitional year program enables all ophthalmology interns to have experiences training in ophthalmology while they begin their training at WVU. Each intern will receive three months of ophthalmology training during the transitional year, with the remaining

nine months spent pursuing rotations in a variety of other specialty areas.

Ophthalmology residents will conduct the majority of their training at the WVU Eye Institute, which proudly serves as the only tertiary eye care center in the state of West Virginia, providing service to patients from across the state and the neighboring states of Ohio, Pennsylvania and Maryland. Residents will spend two rotations per year at the Louis A. Johnson Veterans Administration Hospital in Clarksburg, W.Va.

During their three years of residency, residents will rotate in all ophthalmology subspecialty areas including comprehensive ophthalmology, medical and surgical retina, glaucoma, pediatric ophthalmology, neuro-ophthalmology, oculoplastics and cornea. Residents can expect to treat many patients with a variety of complex ocular disorders from throughout West Virginia and other neighboring states during their training.



New Training Technology and Simulation Lab Provides Ophthalmology Residents with Valuable Experience

The addition of two new pieces of ophthalmic training equipment will provide West Virginia University Department of Ophthalmology and Visual Sciences residents with the opportunity to receive valuable hands-on training experience prior to working in the operating room.

Using funds secured from the generosity of donors, the Department was able to purchase a brand-new EyeSi surgical simulator and Alcon operating microscope in 2022, which were both installed in the WVU Eye Institute's simulation lab in December.

The EyeSi is a virtual simulator that allows trainees to practice delicate surgical procedures such as cataract and retina surgery from the safety and comfort of a simulation lab prior to conducting surgeries on patients. The Alcon operating microscope is the exact same type of microscope that is used daily by Eye Institute ophthalmologists for various surgical procedures.

Residency Program Director Bradley Thuro, M.D., said the addition of the two pieces of equipment will go a long way towards achieving one of his biggest goals as program director.

"When I was named residency program director, I knew I wanted to develop a high-tech simulation lab for our residents with an accompanying surgical curriculum. These two additions are a huge step towards that goal, and I am excited about continuing to build up our lab over the coming years," Dr. Thuro said.

WVU became one of the first universities to adopt the EyeSi simulator into its residency training program when the

Department purchased the machine in 2007. Over the next decade-and-a-half, the EyeSi simulator provided residents with a way to improve their dexterity and surgical techniques, building their confidence levels prior to entering the operating room.

Thuro said that while the simulator proved a valuable tool for the 15 years it was in place at WVU, the underlying software and network of people who use the EyeSi has



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BRADLEY THURO, M.D.
Residency Program Director

grown tremendously over the years, eventually making the machine at the Eye Institute obsolete.

In addition to general software improvements, the new EyeSi allows faculty to train residents through a well-defined set of modules and lets them see benchmark performance measures for residents from across the country who also use the EyeSi. Thuro said this allows faculty to identify areas for improvement in residents' skills and gives them the ability to monitor each learner's performance before they first conduct surgery on a patient.

While the EyeSi allows residents to practice procedures

through computer simulation, the operating microscope in the simulation lab gives them the opportunity to practice hands-on with the same equipment they will later use in the operating room. In the simulation lab, residents can use the fully-functional operating microscope to practice microscope skills such as suturing and tissue manipulation using animal eyes as a proxy.

"In the coming years we will continue to work towards building an expansive and high-tech training lab here at WVU with multiple training stations and instructor audiovisual and simulation feedback," Thuro said.



RESIDENT PROFILE

JAMIE DIETZE M.D.
PGY-4 Resident

Jamie Dietze, M.D., was drawn to a career in ophthalmology because it blends the aspects of medicine that she enjoys most – patient care, research and outreach.

Through completing medical school rotations and job shadowing, Dr. Dietze discovered the field had surgical specialty options, outpatient clinics and research, and also allowed more autonomy for physicians than some other specialties.

But, it's the impact on her patients that makes her certain this field is as much a calling as it is a career.

"There are very few medical fields where your patients return so satisfied and so grateful," Dietze said of ophthalmology. "It's really awesome to be able to help improve someone's quality of life so drastically."

Dietze decided on WVU for her training after searching for couples match residency programs with her husband. WVU ranked highly on both their lists due to its diverse, accredited program options for both of their specialties. She joined the Department of Ophthalmology and Visual

"If you want co-residents or faculty members who are going to support you 100% when you need it, you are going to find that here at WVU."

JAMIE DIETZE, M.D.

Sciences residency program in 2019 and was named chief resident ahead of her final year in 2022.

In addition to strong training opportunities, Dietze said the best thing about the university and the state are the people she encounters on a daily basis.

Dietze said her co-residents, team members and the techs are all willing to help anyone in need and don't hesitate to go above and beyond to ensure the best quality care for their patients.

"Our faculty truly wants everyone around them to succeed," she said. "If a resident is interested in their particular subspecialty, they are always willing to provide additional guidance and insight to help us."

Dietze said the program offers an abundance of opportunities unique to WVU and a deep bench of team members across subspecialties.

Like any field, Dietze acknowledges that there will be hard days, but that WVU's training program helps its residents through those hard days through a great support network.

"If you want co-residents or faculty members who are going to support you 100% when you need it, you are going to find that here at WVU," Dietze said.

FELLOWS



LENA CHEN M.D.
Fellow, Cornea Service



CHRISTINE CLAVELL M.D.
Fellow, Retina Service



SHAYMA JAWAD D.O.
Fellow, Glaucoma Service



PHILIP KUROCHKIN M.D.
Fellow, Retina Service

Exploring Subspecialties Through Fellowship Opportunities

The Department of Ophthalmology and Visual Sciences offers four distinct fellowship programs in the areas of cornea, glaucoma, ophthalmic plastic and reconstructive surgery and retina. The Department supports up to five clinical fellows each academic year across the four programs.

Each fellow serves as a member of Department of Ophthalmology and Visual Sciences faculty and functions as an instructor and mentor to residents and medical students in addition to their clinical duties. Fellows work closely with physicians in their given subspecialty, gradually developing their skills and knowledge to work independently in the clinic and operating room.

Cornea Fellowship Program

The Cornea Fellowship program is led by program director Lingo Lai, M.D., and supported by cornea specialists Annahita Amireskandari, M.D., Thomas Mauger, M.D., and Ebru Toker, M.D. The one-position, one-year fellowship provides extensive hands-on surgical training and offers clinical opportunities in an academic setting.

The fellow should expect to encounter a full-range of corneal diseases and surgeries during the fellowship including PK, DALK, DSAEK, DMEK, K Pro, ocular surface reconstruction, LASIK/PRK, PTK, anterior stromal puncture and corneal crosslinking.

Glaucoma Fellowship Program

The Glaucoma Fellowship program is led by program director Tony Realini, M.D., MPH, and associate fellowship director Brian McMillan, M.D. The one-year fellowship program is supported by glaucoma specialists Kevin Halenda, M.D., and Joel Palko, M.D. The program, which supports one fellow per year, provides an advanced level of subspecialty training in the diagnosis and management of medical and surgical glaucoma.

Fellows provide outpatient glaucoma care alongside faculty two to three days per week, seeing between 110-120 patients in a typical week. Fellows also accompany faculty to the operating room one to two days per week to perform and/or assist in 10-15 surgical cases per week. Fellows can expect to be the primary surgeon on 40-50 trabeculotomy and/or tube shunt procedures, 70-80 MIGS procedures, 100+ phacoemulsification procedures, 100+ laser procedures and a variable number of revisions, examinations under anesthesia and other miscellaneous cases.

Ophthalmic Plastic and Reconstructive Surgery Fellowship Program

The Ophthalmic Plastic and Reconstructive Surgery Fellowship program is led by program director John Nguyen, M.D., and supported by ophthalmic plastic and reconstructive surgery

specialist Bradley Thuro, M.D. The two-year fellowship supports one fellow per year and provides fellows with a well-rounded experience in ophthalmic plastic and reconstructive surgery, with an emphasis on disease and surgery of the orbit.

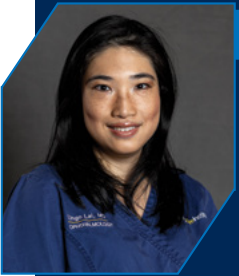
Fellows can expect to collaborate closely with services such as plastic surgery, neurosurgery, ENT, radiology and dermatology. During their tenure, fellows become a part of the WVU skull base team and the vascular malformation program. As members of these teams, fellows participate in all aspects of clinical evaluation, preparation, surgery and follow-up.

Vitreoretinal Fellowship Program

The Vitreoretinal Fellowship program is led by Ghassan Ghorayeb, M.D., and supported by retina specialists Nicole Pumariega, M.D., and Mona Singh, M.D. The program has two fellows at all times, including one incumbent and one new

fellow each year. The fellowship is structured to emphasize the surgical retina experience and to optimize the fellow's exposure to medical retina, ocular oncology and uveitis pathology.

Fellows spend two to three days a week in the operating room with three faculty surgeons. They can expect to perform approximately 100 primary retinal surgeries during the first year of training and more than 450 primary cases by the end of their second year of training. Additionally, fellows spend approximately three days a week in clinic with four faculty members developing their skills in post-operative care and management of surgical complications, diagnosis and treatment of uveitis diseases and diagnosis and treatment of a broad spectrum of retinal diseases. Fellows also spend approximately one-half day per week assisting in the screening and treatment of newborns at risk for retinopathy of prematurity.



FELLOWSHIP DIRECTOR PROFILE

LINGO LAI M.D.
Assistant Professor,
Cornea Fellowship Program Director

When Lingo Lai, M.D., joined the Department of Ophthalmology and Visual Sciences faculty as an assistant professor in 2015, she arrived with the goal of developing a comprehensive cornea fellowship program.

Dr. Lai said she had a great experience during her cornea fellowship at the Wake Forest Baptist Health Eye Center, and that she wanted to be in a position where she could help provide that beneficial training to ophthalmologists specializing in corneal diseases. She noted that the educational opportunities available to medical students, residents and fellows through the other fellowship programs at WVU made it an ideal site for its own cornea fellowship program.

Lai said another major factor that made her want to start the program in Morgantown was the faculty members themselves. She said having faculty members across every ophthalmology subspecialty makes for a wonderful learning environment for students, residents and fellows, but that it's their personalities that shine through the most.

“When I came to interview for this role, I knew right away that it was the place I wanted to be after I sat down and met with the faculty,” Lai said. “Everyone is so friendly here and we have become very close over the years. I try my best to build those same relationships with my fellows so they can feel just as welcome here as I did when I first arrived.”

Lai hopes that the positive relationships that are formed between fellows and faculty help facilitate positive relationships with fellows and their patients. She said she really admires that she is in a department that values the fact that she wants to build a strong doctor-patient relationship with all of her patients.

“The community-driven and small-town atmosphere that West Virginia provides makes it really easy for us as physicians to build bonds with our patients. WVU and this department really encourage us to do that, and that makes my job all the more rewarding,” Lai said.

The Cornea Fellowship Program at WVU officially launched in 2019 with Dr. Lai as the fellowship director. She said that she is looking forward to continuing to build and expand upon the program in the years to come.



Slit Lamp Training Workshop Familiarizes WVU Medical Students with Important Ophthalmic Equipment

A student-led organization at the West Virginia University School of Medicine is giving medical students the opportunity to build their confidence while gaining valuable experience in the field of ophthalmology.

The Ophthalmology Interest Group collaborates with the Department of Ophthalmology and Visual Sciences to expose medical students to the field by promoting faculty and patient interactions, providing observation and shadowing opportunities and offering training sessions on ophthalmic equipment.

The group is open to all medical students currently enrolled at the WVU School of Medicine, and students can be members of the group regardless of their program year.

Fourth-year medical student and Ophthalmology Interest Group president Omar Sadat said the group's annual slit lamp workshop made a big impact on his first ophthalmology rotation.

"When I attended my first workshop, I had no idea how to properly operate the slit lamp," Sadat said. "The training sessions gave me a chance to practice at it and by the time I had my first ophthalmology rotation, I was able to proficiently operate the device and conduct my first eye exam. That was a really rewarding feeling."

Each fall, students enrolled in the Ophthalmology Interest Group participate in a slit lamp training workshop, learning to use the lamp, which is a microscope with a bright light that is used for conducting eye exams. It is a key tool in determining the health of a patient's eyes and detecting ocular diseases.

The workshop is a hands-on training session and Professor and Vice-Chair of Education Geoffrey Bradford,

M.D., said it is an important first step for any student who has an interest in the field.

"The slit lamp is a tool I've used daily for nearly 30 years as a practicing ophthalmologist," Dr. Bradford said. "Being able to provide students with an opportunity to begin familiarizing themselves with such a crucial piece of equipment can be invaluable to their medical education."

The goal of the workshop is to help students like Sadat gain confidence using the equipment ahead of completing their ophthalmology rotation. The training session is led by Bradford and a group of residents from the Department of Ophthalmology and Visual Sciences.

Following an introductory lecture on the utilization of the slit lamp, the students break into small teams with a resident leading a hands-on training session in one of the Eye Institute exam rooms. There, the students have the opportunity to observe a hands-on demonstration on the basics of operating the slit lamp from the residents, and practice conducting eye exams on one another.

Bradford noted that it is important to get the residents involved in this training, as they are able to make a close connection with the students.

"It wasn't that long ago that roles were reversed, and the residents were that eager medical student, excited to learn about a new field. Having them involved in leading this workshop helps them connect with our students and provide a perspective different from that of our faculty," Bradford said.



To learn more about the opportunities available to medical students at the WVU Department of Ophthalmology and Visual Sciences, visit medicine.hsc.wvu.edu/eye/students.

Ophthalmology Interest Group at WVU School of Medicine Introduces Medical Students to Career in Visual Sciences

The Ophthalmology Interest Group at the West Virginia University School of Medicine is opening doors for medical students by introducing them to a career in visual sciences through lectures, hands-on trainings and shadowing opportunities led by WVU Eye Institute ophthalmologists.

The interest group is a student-led organization that collaborates with the Department of Ophthalmology and Visual Sciences to expose medical students to the field through promoting faculty and patient interactions, providing observation and shadowing opportunities and offering training sessions on ophthalmic equipment.

Students can enroll in the interest group as early as their first semester of medical school, and can remain in the group all four years until their graduation. Fourth-year medical student Omar Sadat and third-year medical student Stephen Chen each joined the group during their first year at the WVU School of Medicine, and now serve as the president and treasurer of the group respectively.

Both students said they entered medical school with an initial interest in the field of ophthalmology, and that upon looking further into the group and attending their first meeting that they knew immediately that it was a perfect avenue to further explore the field while also building their skills and knowledge.

“I found the activities offered by the group such as the hands-on trainings and lectures to be really beneficial to me as they allowed me to learn more about the field than I ever had the chance to before, while also allowing me to acquire new skills and interact with the faculty and residents at the Eye Institute,” Sadat said.

Activities hosted by the interest group throughout each academic year include lectures hosted by faculty members focused on different subspecialties and hands-on trainings such as the slit lamp workshop, suture workshop and EyeSi surgical simulation sessions. Each of these trainings are led by Department of Ophthalmology and Visual Sciences faculty and residents and allow students to practice using pieces of ophthalmic equipment in a controlled classroom setting.

In addition to the trainings, students also get the opportunity to become ingrained within the Department and work closely with faculty, fellows and residents.

“During my three years in the Ophthalmology Interest Group, I’ve had the pleasure of getting to know and work alongside the incredible physicians who make up this department,” Chen said. “From shadowing in the clinic, to getting to scrub in on surgeries on an

elective rotation and working on long-term glaucoma research projects, I’ve felt that everyone at the Eye Institute has been very inviting and encouraging to students like me who want to get exposure in the field of ophthalmology.”

Both Sadat and Chen said they are grateful for all the opportunities presented to them through the interest group and that they are looking forward to continue building their knowledge in the field.

“Ophthalmology has a great balance of clinic and surgery, and is a really fulfilling field,” Sadat explained. “A patient can go from a visual acuity of 20/400 to 20/20 in a matter of days following a cataract surgery, which just goes to show how rewarding this field can be. I feel really lucky that I am able to further explore this field through the Ophthalmology Interest Group.”

“From shadowing in the clinic, to getting to scrub in on surgeries on an elective rotation and working on long-term glaucoma research projects, I’ve felt that everyone at the Eye Institute has been very inviting and encouraging to students like me who want to get exposure in the field of ophthalmology.”

STEPHEN CHEN

third-year medical student



ALUMNI PROFILE

LARRY SCHWAB M.D.
Professor Emeritus

A graduate of both the West Virginia University School of Medicine and the Department of Ophthalmology and Visual Sciences residency program, Larry Schwab, M.D., said he will always be grateful to WVU for helping him discover two of his major interests – the field of ophthalmology and serving others.

Dr. Schwab said growing up in and receiving his medical education in West Virginia, which has populations of its own that are underserved, played a significant role on his career trajectory.

“Seeing how people in my own backyard were sometimes unable to get the care they needed opened my eyes to how much this is happening all over the world. It got me thinking about how prominent these issues must be in other regions, especially in poor countries,” Schwab said. “We live in a largely underserved world, and during my medical education, I decided to commit myself to helping underserved people whenever possible.”

Schwab graduated from the WVU School of Medicine M.D. Program in 1966 and returned to WVU three years later to begin his residency with the Department of Ophthalmology and Visual Sciences in 1969.

After completing his medical training, Schwab spent most of the next two decades living in several African countries including Ethiopia, Kenya, Malawi and Zimbabwe, with his wife Martha and their children, where he provided ophthalmic care to underserved people. In addition to providing direct care for patients,

“Being an alumnus created a lifetime of opportunities for me and my family. WVU helped me realize my goals and encouraged my interest in working in the developing world.”

LARRY SCHWAB, M.D.

Schwab also taught and trained ophthalmologists, medical assistants, students and nurses. He also conducted research into the causes of blindness in the African region through his sponsoring organization, the International Eye Foundation.

Schwab said he regards those years as some of the most satisfying of his career. He added that his medical education at WVU enabled him to work cross-culturally.

“Being an alumnus created a lifetime of opportunities for me and my family. WVU helped me realize my goals and encouraged my interest in working in the developing world,” Schwab said.

Schwab said one of the aspects that made his medical education so meaningful was the teaching faculty he had the opportunity to interact with.

“I often reflect on my experiences with the several compassionate teachers I had during my time as a student and resident,” Schwab said. “Those positive faculty encounters were instrumental in creating a lifetime interest in the science and art of medicine.”

Schwab said he was delighted that he could return the favor by joining the Department of

Ophthalmology and Visual Sciences faculty as a professor in 1994, where he continues to work as a contractor to the Louis A. Johnson VA Medical Center in Clarksburg.

“When I joined the WVU adjunct faculty after returning from Africa, my hope was to contribute to medical student and resident teaching just as those who had inspired me during my training. I am grateful for the opportunity I’ve had to interact with faculty, residents and students at West Virginia University throughout my career,” Schwab said.



Making Untreatable Vision Problems Treatable: WVU Receives \$11M for Visual Sciences Research Center

With a new \$11 million grant from the National Institutes of Health, West Virginia University has become just the second university in the country to receive funding for a Center of Biomedical Research Excellence in Visual Sciences.

The CoBRE grant will help WVU develop innovative ways to prevent, treat and slow the progression of vision problems that are currently incurable. That's especially important for West Virginia, which has the second-highest rate of visual disability in the U.S.

"My goal is to use this funding mechanism to propel WVU and vision sciences in reducing visual disparities in our state," said Visvanathan Ramamurthy, the CoBRE's principal investigator. "West Virginia has the second-highest rate of visual disability in the whole country. By 'visual disability,' I mean something that you cannot treat with corrective glasses."

"My goal is to use this funding mechanism to propel WVU and vision sciences in reducing visual disparities in our state. West Virginia has the second-highest rate of visual disability in the whole country."

VISVANATHAN RAMAMURTHY, PH.D.

The \$11 million was awarded by the National Institute of General Medical Sciences, a program of the NIH.

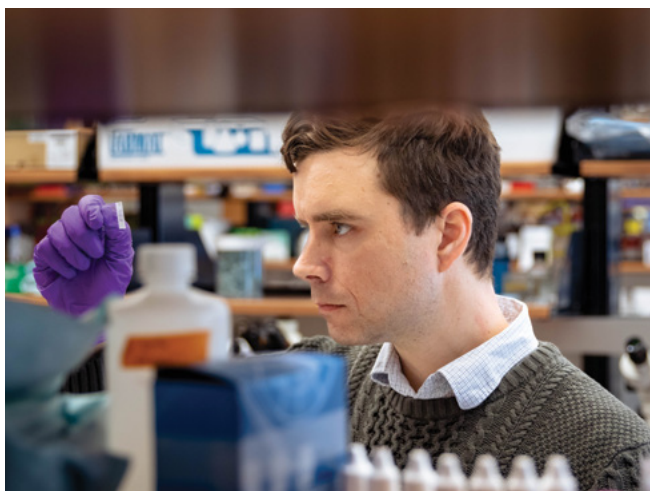
The CoBRE will help WVU recruit researchers and clinician-scientists who can work together to develop innovative ways to prevent, treat and slow the progression of vision problems and blinding eye disease that are currently incurable.

Working as a group to help the individual

"Visual impairment is a terrifying prospect, particularly for a child or their parents and the elderly," said Ramamurthy, WVU's research director of ophthalmology, professor and chairman of the Department of Biochemistry and Molecular Medicine and professor in the Department of Ophthalmology and Visual Sciences. "Also, if you think about it, a lot of us lose

vision as we get older. If you are slowly losing vision from age-related macular degeneration—or so many other things—the cumulative effect is quite pronounced. For example, challenges with vision are associated with an increase in falls. While changes in vision do not shorten your lifespan, there is a definite impact on overall health and well-being.”

Four researchers have been competitively chosen to lead the CoBRE’s projects: Sadie Bergeron, assistant professor in the Department of Biology; Michael Robichaux, assistant professor with the Department of Ophthalmology and Visual Sciences; Bradley Webb, assistant professor with the Department of Biochemistry and Molecular Medicine and Joel Palko, assistant professor and clinical faculty member with the Department of Ophthalmology and Visual Sciences.



Their collective experience encompasses conducting laboratory experiments and seeing patients.

“The idea is to think collaboratively,” Ramamurthy said. “How can we make change? How can we translate our basic science findings to clinical practice that helps people? And how can we learn what’s happening in the community? That’s a connection we want to make.”

“The combination of clinician and basic scientists, along with cutting-edge technology that will be enabled by the NIGMS support, positions the team to have real impact,” said Laura Gibson, senior associate vice president for research and graduate education for WVU Health Sciences. “Importantly, the benefit is also felt by the outstanding graduate students who will be engaged in projects across various CoBRE-supported labs. This CoBRE lands at the perfect intersection of problems that need solved and a diverse scientific community that is ready to take them on together.”

The project leaders who get CoBRE support will receive three years of mentorship from senior scientists and experts around the country, who will mentor them toward independence.

Undergraduate students will continue to benefit from this NIGMS investment, as well. Eight undergraduate students will participate in a vision science research program each summer and be exposed to breakthrough science focused on understanding the mechanisms behind blinding diseases.

A ‘broader solution’ for vision problems

Is education—or a lack thereof—one of the reasons for West Virginia’s disparity in visual disability? What role does the state’s high incidence of diabetes play in the problem? What about the state’s widespread poverty, or the large percentage of its population that’s 65 or older?

Scientists don’t yet know the answers to these and similar questions. The CoBRE, however, could help them find out.

“How can we reduce that visual disparity that we see in the state, and what could be the reasons for it?” Ramamurthy said. “There are some obvious things we can think about, but we need to better understand the contribution of suboptimal access and the response to current treatments. We don’t fully understand this health disparity, but we need to think about the complex combination of factors that may be important.”

What Ramamurthy, his colleagues and his students discover could have ramifications across—and beyond—West Virginia.

“There are a lot of places around the world that have vision problems that exceed those that we have in West Virginia,” he said. “We want to part of a broader solution.”

“Visual loss and blindness are a harsh reality for many people in our state and worldwide,” said Dr. Thomas Mauger, who chairs the Department of Ophthalmology and Visual Sciences. “Our clinicians care for these patients every day and are excited about the opportunity to collaborate with our research colleagues to find new treatments for blinding eye diseases such as retinitis pigmentosa, glaucoma, diabetic retinopathy, macular degeneration among others.”

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RESEARCH PROFILE

VISVANATHAN RAMAMURTHY PH.D.

Professor, Vice Chair of Research
Additional Appointments: Chairman, Professor,
Department of Biochemistry

Visvanathan Ramamurthy, Ph.D., hopes to continue making positive impacts on the health and wellness of West Virginians with ocular diseases while mentoring the next generation of scientists.

Ramamurthy joined WVU as an assistant professor in 2006, serving the departments of Ophthalmology and Visual Sciences and Biochemistry and Molecular Medicine. Ramamurthy said that the collaborative and supportive nature of WVU has provided him with ample opportunities to secure federal grants and establish his research program. He credits his success in those areas for giving him the knowledge and tools he needs to be able to make a positive change in the ocular health of West Virginians.

One such grant is the NIH CoBRE grant, which has made WVU just the second university in the country to receive funding for a Center of Biomedical Research Excellence focused on visual sciences. West Virginia has the second-highest rate of visual disability in the U.S., according to Ramamurthy, and he says this funding will propel WVU forward in reducing those visual disparities.

“CoBRE will allow us to recruit researchers and clinician-scientists who we can work with to develop innovative ways to prevent, treat and slow the progression of vision problems and blinding eye disease that are currently incurable right here in West Virginia.”

VISVANATHAN RAMAMURTHY, PH.D.

“CoBRE will allow us to recruit researchers and clinician-scientists who we can work with to develop innovative ways to prevent, treat and slow the progression of vision problems and blinding eye disease that are currently incurable right here in West Virginia.”

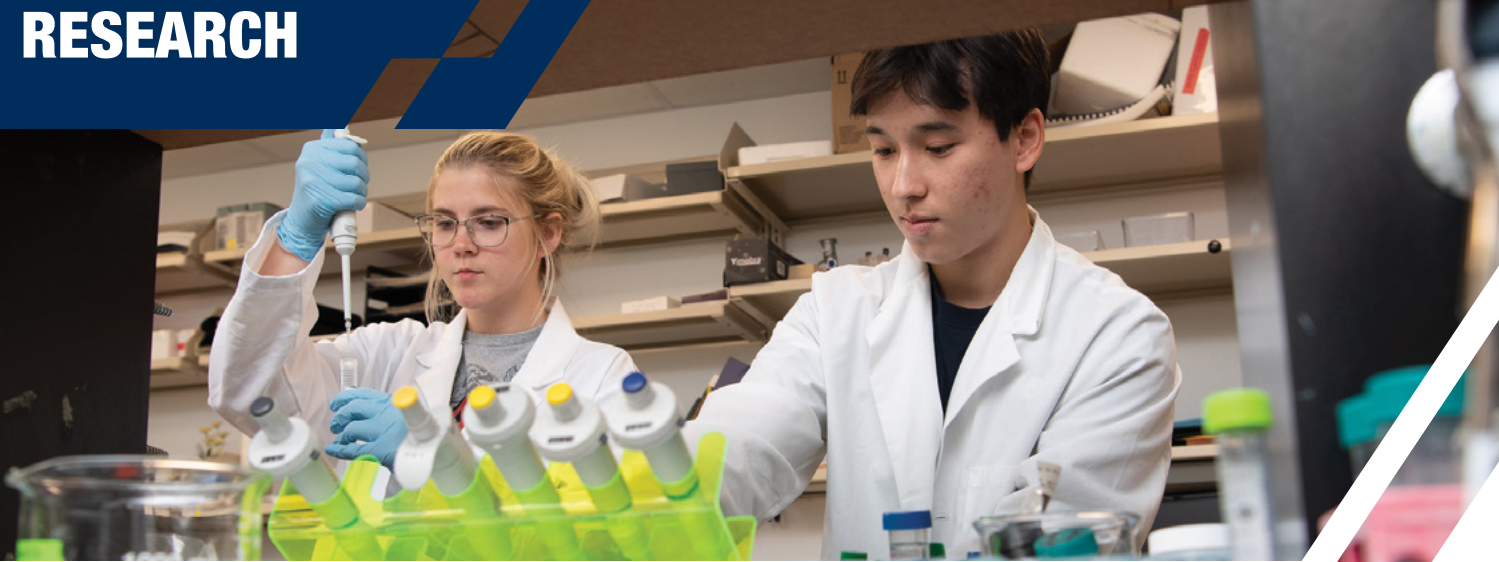
In addition to making an impact on the state as a whole, he is also continuing to make an impact in the classroom. During his 16 years at the University, Ramamurthy says his passion to teach has only grown.

“Watching our students and trainees grow and become more competent and curious researchers is one of the most rewarding aspects of my role. I love seeing them question me, themselves and the research,” Ramamurthy said. “Their drive to make discoveries each day inspires me to do the same.”

Ramamurthy has served as the director of research for the WVU Eye Institute since 2008 and the chair for the Department of Biochemistry and Molecular Medicine since 2020. During his time at WVU, he has accumulated several awards and honors, but he says the one that he treasures most came from his students.

“I was awarded the WVU School of Medicine’s Outstanding

Mentor Award in 2018, based on nominations from my students. I felt very humbled by that and it means so much to me to know I have been able to have as positive of an impact on my students throughout my career as they have had on me,” Ramamurthy said.



Summer Undergraduate Vision Research Fellowship Program

Through an innovative, hands-on summer vision research program supported by the NIH Visual Sciences CoBRE grant at West Virginia University’s School of Medicine, eight undergraduate students from across the U.S. had the opportunity to make new and exciting discoveries about ocular diseases and treatments.

WVU senior Immunology and Medical Microbiology major Jack Evans said his time in the Summer Undergraduate Vision Research Fellowship Program provided fuel for him and other young scientists to ignite a lifetime of passion and potential for discovery.

“I never had the opportunity to participate in research like this before,” Evans explained. “I got to come into a lab, and for the first time, not know what result I was going to get. I found that very exciting.”

The 10-week program led by the Department of Ophthalmology and Visual Sciences and Department of Biochemistry and Molecular Medicine research faculty

emphasizes components of basic vision research with focuses on ocular diseases and the exploration of new diagnostic and treatment methods.

Though Evans hadn’t had any ophthalmology experience prior, he was excited to apply for the program because it involved one of his greatest passions – further understanding the science behind the human body.

“I came to WVU to study immunology because I had always been fascinated by science and the way the human body worked,” Evans said. “Though ophthalmology may not relate to immunology directly, I was still excited by the idea of developing a better understanding of the human eye through vision research and to be introduced to a new area of science.”

Upon being accepted to and joining the program supported by the Visual Sciences CoBRE grant, Evans got the opportunity to work under Saravanan Kolandaivelu, Ph.D., who is the co-fellowship coordinator for the

Summer Undergraduate Vision Research Fellowship Students



PATRICIA BEST
Fairmont State University



JASON BORST
University of Virginia



MARION CAHILL
West Virginia University



KAMDEN DULANEY
Fairmont State University

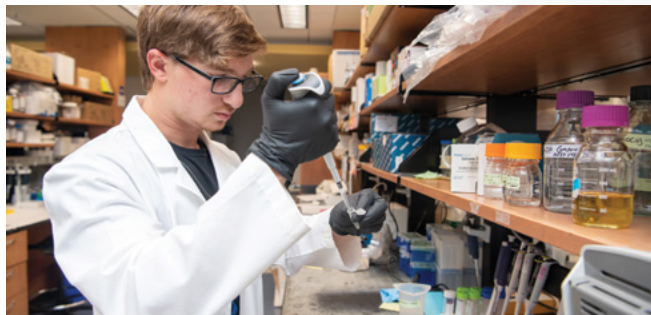
program alongside Michael Robichaux, Ph.D. Together, Evans and Dr. Kolandaivelu conducted research on the importance of electric impulse retinal function.

“While working with Jack as his mentor, I immediately took notice of his immense drive as a young researcher. He showed extraordinary interest and brilliance in our research topic and I have been happy to play a role in his academic journey,” Kolandaivelu said.

At the end of the program, Evans concluded that removing an enzyme crucial for maintaining electrolyte gradient in the photoreceptor cells affects its functions. He said he was excited to be able to come to a conclusion in the program’s timeframe, but that he plans to continue expanding upon that research.

“Since I am a student here at WVU, I’m going to have the opportunity to continue volunteering in Dr. Kolandaivelu’s lab and keep working on this research. Our goal is to publish a paper on our findings this year,” Evans said.

Dr. Robichaux said that as a fellowship coordinator, he finds it very rewarding to introduce scientifically-minded



“Most undergraduate students who are interested in pursuing a medical degree or Ph.D. have limited exposure to the day-to-day proceedings of a research lab at a major biomedical research institution like WVU. [It is] exciting when I get to participate in the positive experience of helping students complete experiments, reach scientific conclusions and present their findings to an audience.”

MICHAEL ROBICHAUX, PH.D.
Fellowship Coordinator

their findings to an audience. We are thankful for the NIH Visual Sciences CoBRE grant for funding and providing us with these opportunities.”

Robichaux added that since basic science research in vision is often a field that is lesser known by students interested in pursuing a career in medicine, he appreciates the responsibility he and his colleagues have to introduce the importance of vision research to students and help them understand how it translates to clinical ophthalmology.

young people like Evans to basic science research for the first time and provide them with the opportunity to conduct hands-on research in a lab and make discoveries themselves.

“Most undergraduate students who are interested in pursuing a medical degree or Ph.D. have limited exposure to the day-to-day proceedings of a research lab at a major biomedical research institution like WVU,” Robichaux explained. “Providing that opportunity alone is rewarding enough, but it is even more exciting when I get to participate in the positive experience of helping students complete experiments, reach scientific conclusions and present



JACK EVANS
West Virginia University



EMMANUEL FRIMPONG
Claflin University

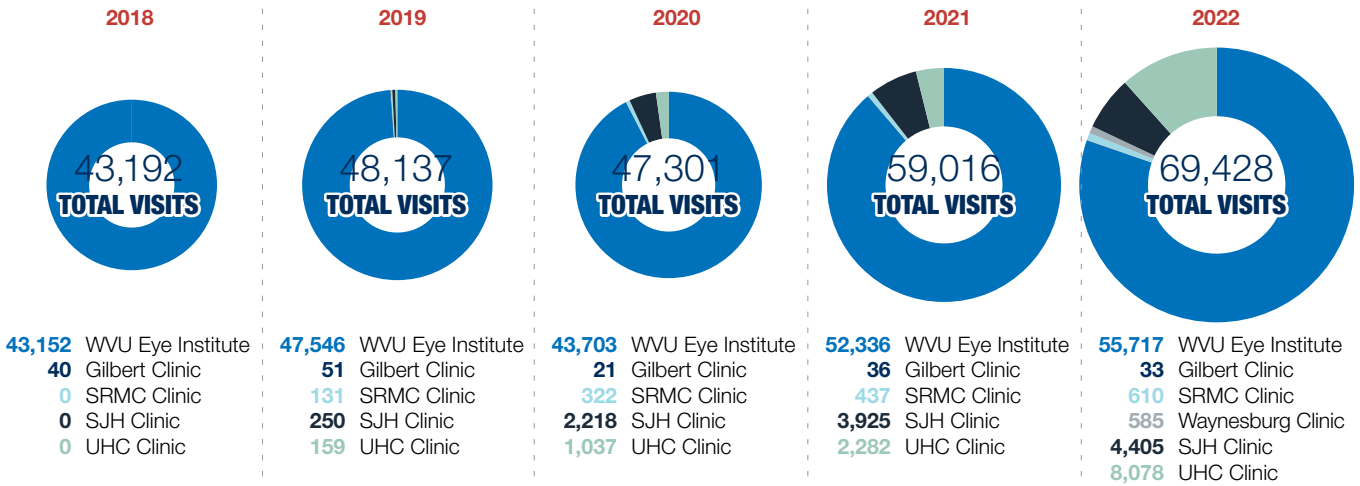


DANA GOODMAN
Fairmont State University

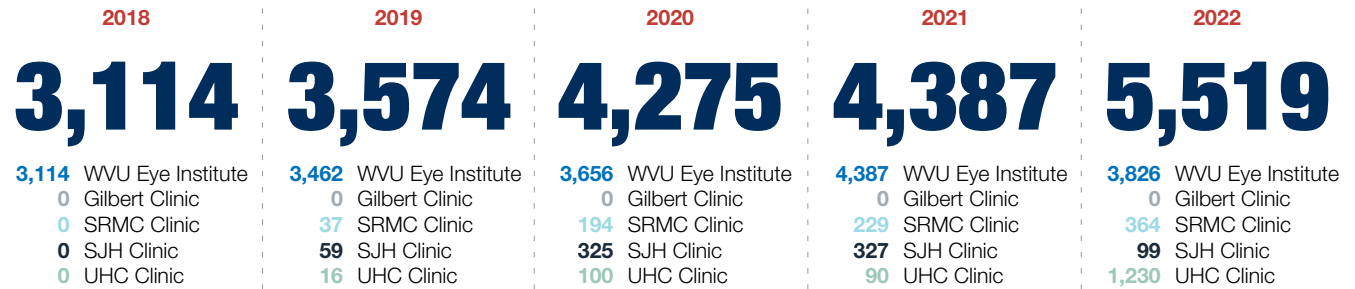


CIERSTEN ROSE
Concord University

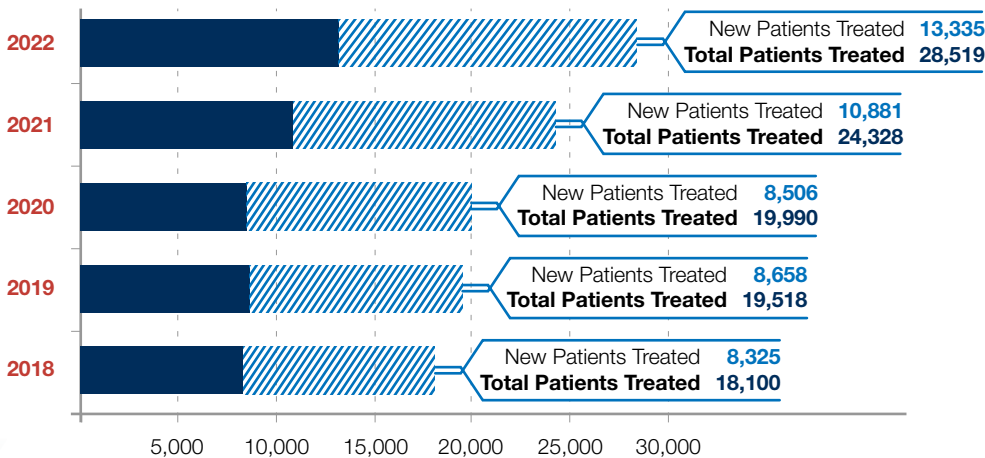
Department of Ophthalmology and Visual Sciences **At-A-Glance**



Total Surgeries



Patients Treated





CLINICAL PROFILE

GRACE LEVY-CLARKE M.D.
Associate Professor

As West Virginia University's sole fellowship-trained uveitis specialist, Grace Levy-Clarke, M.D., provides patients with a much-needed service while also educating the next generation of ophthalmologists on the treatment and management of complex ocular diseases.

Uveitis is a rare form of eye inflammation that affects the middle layer of tissue in the eye wall known as the uvea. The disease can be extremely serious, Dr. Levy-Clarke explained, and can lead to permanent vision loss if left untreated.

After learning in-depth about uveitis from a specialist during her ophthalmology residency, Levy-Clarke became fascinated with the subject and eventually enrolled in the Clinical Research Fellowship in Ocular Immunology and Uveitis at the National Eye Institute.

Levy-Clarke joined the West Virginia University Department of Ophthalmology and Visual Sciences as an assistant professor in 2021, becoming the only fellowship-trained uveitis specialist practicing at the WVU Eye Institute.

"With uveitis being such a rare disease, many academic centers won't allow you to specialize in only uveitis as a faculty member, but that wasn't the case here at WVU," Levy-Clarke explained.

"We were very excited by the opportunity of adding Dr. Levy-Clarke to our faculty and further expanding the services offered at the Eye Institute to include uveitis care," Department of Ophthalmology and Visual Sciences Chair Thomas Mauger, M.D., said. "Having Dr. Levy-Clarke at the Eye Institute allows us

to provide a much-needed service to our patients from across the region."

Levy-Clarke said that she is currently the only fellowship-trained uveitis specialist practicing in West Virginia, and that she sees patients from across the state, as well as patients from the neighboring states of Ohio, Pennsylvania and Maryland.

"Uveitis patients are what we call 'frequent flyers' because management of the disease often requires a lot of clinical visits," Levy-Clarke said. "This gives me the opportunity to develop a close relationship with all of the patients, which is so critical in my job, treating potentially blinding diseases with high-risk medications."

Levy-Clarke called being a uveitis specialist at the WVU Eye Institute her 'most prized opportunity,' because it allows her to provide a much-needed service to patients, while also helping educate residents about uveitis and other rare ocular inflammatory diseases.

"Uveitis specialists are a dying breed, and that is something I aim to change here at WVU," Levy-Clarke said.

She said that WVU gives her the opportunity to introduce residents to the field of ocular immunology and provide them with opportunities to train hands-on with her while learning about rare ocular diseases such as uveitis and ocular sarcoidosis.

"At WVU I am able to help provide residents with a background in uveitis and ocular immunology, which is an opportunity that may not be available at other training institutions," she explained. "This allows us as faculty to further ensure that our residents are receiving a well-rounded education in ophthalmology that thoroughly explores each subspecialty."

"At WVU I am able to provide residents with a background in uveitis and ocular immunology, which is an opportunity that may not be available at other training institutions."

GRACY LEVY-CLARKE, M.D.

Making a Difference Across West Virginia

The West Virginia University Eye Institute is proud to provide outreach services to West Virginians in need. Two of the Eye Institute’s statewide outreach programs include the Appalachian Vision Outreach Program and the Children’s Vision Rehabilitation Program. The outreach efforts at the Eye Institute are led by director of outreach Rebecca Coakley, M.A., CLVT.

Thanks to partnerships with local organizations including the West Virginia Lions Club, the West Virginia Association of Free Clinics, the West Virginia Department of Education and contributions from individuals and foundations, the Eye Institute is able to bring its many services to several counties throughout West Virginia.

Providing ocular care without boundaries

The Appalachian Vision Outreach Program (AVOP) provides ocular care to any and all West Virginians who may not have access to regular care due to geographic and financial obstacles. Approximately once per month, a team from the Eye Institute travels to a different county to provide residents in need with services such as screenings, full eye exams, glasses, identifications of eye diseases and referrals for specialty care and services. In 2022, the Eye Institute hosted 13 AVOP clinics in 13 counties across West Virginia.



Scan the QR Code to learn more about AVOP: go.wvu.edu/avop

Responding to the needs of children in West Virginia

The Children’s Vision Rehabilitation Program (CVRP) is a needs-based program that responds to the individual needs of visually-impaired children along with their parents, teachers and related professionals in West Virginia.

CVRP’s mission is to provide comprehensive vision rehabilitation services to blind and visually impaired school-aged children throughout West Virginia regardless of their ability to pay. The program’s goal is to give children the tools they need to become independent and employable by optimizing visual function both at home and at school. CVRP provides access to the visual environment for children with incurable vision loss through medical eye care, optical devices, assistive technology, educational recommendations and support to local school systems.



Scan the QR Code to learn more about CVRP: go.wvu.edu/cvrp



Educational opportunities through Institutes of Learning

CVRP hosts special educational events for children known as Institutes of Learning several times per year. The Institutes of Learning provide a forum for visually-impaired children to receive direct instruction on specific skills and are typically hosted during the summer months when school is no longer in session.

The Institutes of Learning held each year include the CVRP Day Camp, the High School Adventure Camp, the Orientation and Mobility Institute of Learning, the Technology Institute of Learning and the Physical Literacy Program. CVRP had a total of 201 participants across all six Institutes of Learning that were held in 2022.



2022 IOL Participants

- 27 CVRP Day Camp
- 25 High School Adventure Camp
- 23 Orientation and Mobility Institute of Learning
- 16 Technology Institute of Learning
- 110 Physical Literacy Program



Scan the QR Code to learn more about the Institutes of Learning: (go.wvu.edu/iol)



OUTREACH PROFILE

BECKY COAKLEY
WVU Eye Institute Director of Outreach

For more than 25 years, Director of Outreach for the West Virginia University Eye Institute Becky Coakley has dedicated her career to advocating for the state's blind and low-vision population through the programs she has helped start at the University.

One of these programs, the Children's Vision Rehabilitation Program, aims to bridge the gap between the medical and educational fields for children who are blind or visually-impaired.

CVRP works in coordination with teachers in West Virginia to medically evaluate visually-impaired children and prescribe them devices that they can use in the classroom to help them access information just like their peers do, and at home for day-to-day use.

When the program officially launched in 1996, it held the honor of being only the second low-vision program created specifically for children in the United States, and it is now the longest-running advocacy program for blind and visually-impaired children in the country, according to Coakley.

"West Virginia was the perfect place to start a program like CVRP," Coakley said. "We're such a small, family-oriented state, so it was not hard for us to get

physicians on board and to reach out to parents and teachers to become a community."

The children involved in CVRP are often referred to the program at birth, and Coakley explained that CVRP works with these children to help them thrive and excel until they graduate high school and age out of the program.

"But the work doesn't stop when the patients are no longer children," she explained. "Many CVRP patients go to college but lack the independent living skills or social skills necessary to thrive in that environment. As a result, our Eye Institute outreach team created Institutes of Learning programs where we help blind and low-vision young adults develop the skills to advocate for themselves, become more independent and learn critical skills in communication to allow them to become more independent and employable. "

Coakley describes the children she has worked with over the years through CVRP as her "second family," and said she cherishes the relationships she has built with patients over the years through the program.

"Keeping close bonds with the children as they grow into adults and seeing the amazing things they grow up to accomplish is incredibly rewarding," Coakley said. "Even though they have to work through so many obstacles they always find ways to persevere, which makes me very proud."



WVU Eye Institute Continues to Provide Vital Eyecare in Saint Lucia Through Kids Insight

For 20 years, the West Virginia University Eye Institute has been contributing to outreach efforts on a national scale with yearly trips to Saint Lucia through the Kids Insight program.

Kids Insight is a joint project of the Saint Lucia Blind Welfare Association (SLBWA), the Lions Club of Saint Lucia and the WVU Eye Institute which addresses the vision needs of children with blinding eye conditions in Saint Lucia, a small island country located in the eastern Caribbean. The program offers a comprehensive approach to pediatric eyecare, including surgical, educational and rehabilitation needs. While the program is aimed at children, Kids Insight also provides ophthalmic care to adults in need.

Kids Insight is also a product of the Children's Vision Rehabilitation Program (CVRP), which is a needs-based program that responds to the individual needs of visually impaired children in West Virginia. CVRP is led by WVU Eye Institute director of outreach, Rebecca Coakley, M.A., CLVT.

Department of Ophthalmology and Visual Sciences professor John Nguyen, M.D., said that due to economic and geographic factors, many Saint Lucians with complex ocular diseases are unable to get the care they need. Without proper access to care, patients with severe cataracts and diseases such as glaucoma are at risk of permanent vision loss if left untreated, which according to Dr. Nguyen, is where the Eye Institute comes in.

"They don't have an Eye Institute in Saint Lucia," Nguyen explained. "So instead, we essentially bring the Eye Institute to them."

Nearly every year since 2003, a team of Eye Institute faculty and staff have traveled to Saint Lucia to spend approximately one-to-two weeks providing services such as ocular surgeries, eye exams and low-vision clinic evaluations to residents in need. Prior to the team's arrival, ophthalmic equipment and tools procured through donor funds are shipped to Saint Lucia, allowing the team from the Eye Institute to set up 'pop-up clinics' to provide care for patients.

In October 2022, a team from the Eye Institute consisting of Coakley, Nguyen, assistant professor Charles Moore, M.D., and surgical technician Donna Wheeler made the trip to Saint Lucia for the first time since the COVID-19 pandemic in 2020. Coakley said that following a two-year hiatus due to the pandemic, it was more important than ever to make the trip in 2022.

"Kids Insight is a 20-year partnership between us and the people of Saint Lucia, meaning these patients rely on us to provide them with the eyecare they desperately need," Coakley said. "We knew the need would be great after not being able to make the trip the last two years, so it was really important for us to help as many people as possible once we got to Saint Lucia."

"They don't have an Eye Institute in Saint Lucia. So instead, we essentially bring the Eye Institute to them."

JOHN NGUYEN, M.D.

The Kids Insight team saw a total 46 patients during the six days they were in Saint Lucia in 2022, consisting of 33 children and 13 adults. During that time, Eye Institute ophthalmologists completed 17 surgeries, including four pediatric cataract surgeries, five adult cataract surgeries, three pediatric ptosis surgeries, three adult ptosis surgeries and two adult tumor resection surgeries. Additionally, eye exams were conducted on several patients and orders were made for 16 pairs of glasses to be manufactured and shipped to Saint Lucia for patients.

In addition to continued yearly trips to Saint Lucia through Kids Insight, Coakley said the WVU Eye Institute and CVRP are in the process of expanding to mission trips to other countries to establish low-vision clinics and further help those in need.

“We’ve managed to do some amazing things through Kids Insight, but we also know that there is so much work left to be done,” Coakley said. “Any person, regardless of where they are from, deserves to have the same access to eyecare as anyone else. We are doing our best to make that a reality in any place that we can.”

46
PATIENTS
in six days

17
SURGERIES
performed

16
GLASSES
ordered



Captions go here

Department of Ophthalmology and Visual Sciences Publications (Jan. 1 - Dec. 31, 2022)

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* International Ocular Toxoplasmosis Study Group includes John Nguyen, M.D.
** ASSISTS Group includes Brian McMillan, M.D.

Funding Jan 1 - Dec 31, 2022

Basic Science Grants

Wen-Tao Deng, Ph.D., Assistant Professor

Additional Appointment: Assistant Professor, Department of Biochemistry and Molecular Medicine

[Disease mechanisms of cone opsin mutants and treatment strategies](#)

US DHHS-NIH-National Eye Institute

Duration: 8/1/2021 - 7/31/2024

Total Award Amount: \$1,512,000

Jianhai Du, Ph.D., Associate Professor

Additional Appointment: Associate Professor, Department of Biochemistry and Molecular Medicine

[Proline metabolism in retinal health](#)

US DHHS-NIH-National Eye Institute

Duration: 6/1/2021 - 3/31/2026

Total Award Amount: \$1,900,000

[Mitochondrial Pyruvate Transport in Retinal Health and Disease](#)

US DHHS-NIH-National Eye Institute

Duration: 1/1/2021-11/30/2024

Total Award Amount: \$1,520,000

[Targeting proline metabolism in AMD](#)

BrightFocus Foundation

Duration: 9/1/2020-8/31/2022

Total Award Amount: \$185,000

[Nutritional Strategies in Age-Related Macular Degeneration](#)

International Retinal Research Foundation

Duration: 1/1/2021 - 12/31/2022

Total Award Amount: \$43,000

[Regulators of Retinal Metabolism in Healthy and Degenerating Retinas](#)

Sub-award University of Florida

Duration: 9/1/2020 - 6/30/2025

Total Award Amount: \$179,912

[Physiologically Relevant in vitro Modeling of RPE Disease](#)

Sub-award University of Washington

Duration: 1/1/2020 - 12/31/2022

Total Award Amount: \$20,179

[Pathogenesis and motor neuron degeneration of a novel disease associated with a P158A mutation in NAMPT gene](#)

Sub-award University of Missouri

Duration: 4/1/2022 - 3/31/2027

Total Award Amount: \$93,630

Saravanan Kolandaivelu, Ph.D., Assistant Professor

Additional Appointment: Assistant Professor, Department of Biochemistry and Molecular Medicine

[Mechanisms Behind Retinal Photoreceptor Cells Outer Segment Biogenesis](#)

US DHHS-NIH-National Eye Institute

Duration: 5/1/2018 - 4/30/2023

Total Award Amount: \$1,488,750

Joel Palko, M.D., Assistant Professor

Visual Sciences Center of Biomedical Research Excellence

US DHHS-NIH-National Institute of General Medical Sciences

Duration: 3/20/2022 - 1/31/2023

Total Award Amount: \$329,602

Michael Robichaux, Ph.D., Assistant Professor

Additional Appointment: Assistant Professor, Department of Biochemistry

Visual Sciences Center of Biomedical Research Excellence

US DHHS-NIH-National Institute of General Medical Sciences

Duration: 3/20/2022 - 1/31/2023

Total Award Amount: \$294,900

[Subcellular Analysis of Photoreceptor Cell Health in Mouse Models for Retinitis Pigmentosa and Retinal Gene Therapy](#)

Knights Templar Eye Foundation Inc.

Duration: 7/1/2022 - 6/30/2023

Total Award Amount: \$68,759

Maxim Sokolov, Ph.D., Professor

Additional Appointments: Professor, Department of Biochemistry and

Molecular Medicine; Professor, Department of Neuroscience; Professor,

Rockefeller Neuroscience Institute

[Protein-Unfolding Chaperones for the Treatment of Blindness](#)

US DHHS-NIH-National Eye Institute

Duration: 6/1/2019 - 5/31/2023

Total Award Amount: \$1,410,750

Visvanathan Ramamurthy, Ph.D., Professor, Vice-Chair of

Research; Additional Appointments: Chairman & Professor, Department of

Biochemistry and Molecular Medicine

[Biosynthesis and Trafficking of Phosphodiesterase in the Retinal Photoreceptors](#)

US DHHS-NIH-National Eye Institute

Duration: 4/1/2020 - 3/31/2025

Total Award Amount: \$1,921,805



Clinical Research Funding

Ghassan Ghorayeb, M.D., Associate Professor, Vitreoretinal
Division Director & Vice-Chair of Clinical Affairs

A Multicenter, Prospective, Observational Study of the Progression
Of Intermediate Age-Related Macular Degeneration

Genentech Incorporated

Duration: 8/8/2022 - 8/30/2024

Total Award Amount: \$5,500

A Phase 2, Outcomes Assessor-Masked, Multicentre, Randomised
Study to Evaluate the Safety and Efficacy of Two Doses of
Gt005 Administered as a Single Subretinal Injection in Subjects
with Geographic Atrophy Secondary to Age-Related Macular
Degeneration

Gyroscope Therapeutics, Ltd

Duration: 10/6/2021 - 2/28/2024

Total Award Amount: \$4,000

A Randomized, Double-Masked, Active-Controlled, Phase 2/3 Study
of the Efficacy and Safety of High Dose Aflibercept in Patients with
Diabetic Macular Edema

Regeneron Pharmaceuticals, Inc.

Duration: 12/8/2022 - 6/9/2023

Total Award Amount: \$5,871

A Phase 3, Multicenter, Double-masked, Randomized Study
to Evaluate the Efficacy and Safety of Intravitreal OPT-302 in
Combination with Aflibercept, Compared with Aflibercept
Alone in Participants with Neovascular Age-related Macular
Degeneration (nAMD)

Opthea

Duration: 5/24/2021 - 12/31/2025

Total Award Amount: \$7,000

RAINBOW Extension Study: An Extension Study to Evaluate the
Long-term Efficacy and Safety of Ranibizumab Compared with
Laser Therapy for the Treatment of Infants Born Prematurely with
Retinopathy of Prematurity

Novartis Pharmaceutical Corporation

Duration: 3/1/2017 - 10/30/2023

Total Award Amount: \$21,233

Randomized, Double-Masked, Active-Controlled, Phase 3 Study of
the Efficacy and Safety of High Dose Aflibercept in Patients with
Neovascular Age-Related Macular Degeneration

Regeneron Pharmaceuticals, Inc.

Duration: 9/2/2020 - 5/27/2023

Total Award Amount: \$31,135

\$5.5M

total research funding from
NATIONAL INSTITUTES OF HEALTH

10

federal grants from
NATIONAL EYE INSTITUTE



GR41986 A Phase III, Multicenter, Randomized, Double-Masked, Active Comparator Controlled Study to Evaluate the Efficacy and Safety of Faricimab in Patients with Macular Edema Secondary to Central Retinal or Hemiretinal Vein Occlusion

Hoffmann-La Roche Inc.
Duration: 10/27/2020 - 1/18/2024
Total Award Amount: \$28,282

A Phase 2, Randomized Multi-center Study to Assess the Dose level of Multiple THR-149 Injections and to Evaluate the Efficacy and Safety of THR-149 Vs. Aflibercept for the treatment of diabetic macular edema

Oxurion NV
Duration: 10/19/2020 - 3/31/2023
Total Award Amount: \$10,768

A Multicenter, Open-Label Extension Study To Evaluate the Long-Term Safety And Tolerability of Faricimab in Patients With Diabetic Macular Edema

Genentech Incorporated
Duration: 12/3/2020 - 8/18/2023
Total Award Amount: \$66,442

Randomized, Controlled, Multi-Center Study to Assess the Efficacy, Safety and Tolerability of Intravitreal Aflibercept Compared to Laser Photocoagulation in Patients with Retinopathy of Prematurity

Parexel International Corp
Duration: 10/7/2019 - 10/1/2022
Total Award Amount: \$169,861

KINGFISHER

Novartis Pharmaceutical Corporation
Duration: 7/1/2019 - 7/30/2022
Total Award Amount: \$38,277

GTSCOPE

Medpace Inc.
Duration: 10/23/2019 - 1/8/2023
Total Award Amount: \$16,933

A Phase 3, Multicenter, Randomized, Double-Masked, Active Comparator-Controlled Study to Evaluate the Efficacy and Safety of RO6867461 In Patients With Diabetic Macular Edema (YOSEMITE)

Genentech Incorporated
Duration: 11/27/2018 - 2/28/2022
Total Award Amount: \$211,199

A Multicenter, Double-Masked, Randomized, Dose-Ranging Trial to Evaluate the Efficacy and Safety of Conbercept Intravitreal Injection in Subjects with Neovascular Age-Related Macular Degeneration

Syneos Health
Duration: 12/10/2018 - 1/29/2022
Total Award Amount: \$309,517

A Multi Center, Randomized, Double-Masked, Active- Controlled, Comparative Clinical Study to Evaluate the Efficacy and Safety of MYL-1701P and Eylea in Subjects with Diabetic Macular Edema

Icon Clinical Research, Inc.
Duration: 6/12/2018 - 6/30/2022
Total Award Amount: \$77,316

Lingo Lai, M.D., Assistant Professor, Cornea Fellowship Director

A Phase 2 Open Label Trial of ST266 Eye Drops in the Treatment of Persistent Corneal Epithelial Defects (PED)

Noveome Biotherapeutics, Inc.
Duration: 2/5/2020 - 4/21/2030
Total Award Amount: \$10,905

\$15,269,100
IN FUNDS

from

45
SOURCES

Brian McMillan, M.D., Associate Professor, Associate Glaucoma Fellowship Director, Anterior Segment Director

[An Extension Trial to Evaluate the Long-term Safety and Efficacy of Bimatoprost SR in Patients with Open Angle Glaucoma or Ocular Hypertension](#)

Allergan Inc.

Duration: 9/6/2019 - 1/21/2024

Total Award Amount: \$6,000

[Field Test of Glaucoma Outcomes Survey](#)

The Emmes Corporation

Duration: 2/4/2021 - 1/30/2031

Total Award Amount: \$1,450

John Nguyen, M.D., Professor & Ophthalmic Plastic and Reconstructive Surgery Fellowship Director

[On Assessing Iris Recognition Performance in the Presence of Ocular Diseases](#)

US-DOJ-Federal Bureau of Investigations

Duration: 5/1/2021 - 1/30/2023

Total Award Amount: \$47,542

[A Phase 2b, Randomized, Double-Mask, Placebo-Controlled, Study to Evaluate the Safety, Pharmacokinetics and Efficacy of Linsitinib in Subjects with Active, Moderate to Severe Thyroid Eye Disease \(TED\)](#)

VasaraGen, Inc.

Duration: 1/24/2022 - 8/31/2025

Total Award Amount: \$6,993

[A Phase 2b, Multicenter, Randomized, Double-blind, Placebo-controlled Study of RVT-1401 for the Treatment of Patients with Active, Moderate to Severe Graves' Ophthalmopathy](#)

Syneract, Inc.

Duration: 2/7/2020 - 2/28/2022

Total Award Amount: \$21,167

Tony Realini, M.D., MPH, Professor, Glaucoma Fellowship Director & Vice-Chair for Clinical Research

[Clarifying the Optimal Application of SLT Therapy \(COAST\) Trial](#)

US DHHS-NIH-National Eye Institute

Duration: 9/30/2020 - 8/31/2025

Total Award Amount: \$2,667,572

Service Grant Funding — State Awards

Becky Coakley, M.A., CLVT, Director of Outreach, West Virginia University Eye Institute

West Virginia Department of Education

State of West Virginia

Duration: 7/1/2021 - 9/30/2022

Total Award Amount: \$98,190

Service Grant Funding — Foundation Awards

Greater Kanawha Valley Foundation

Duration: 2022

Total Award Amount: \$103,950

Benedum Foundation

Duration: 2022

Total Award Amount: \$120,000

Teubert Foundation

Duration: 2022

Total Award Amount: \$74,460

Pallottine Foundation

Duration: 2022

Total Award Amount: \$34,000

Appalachian Power (AEP)

Duration: 2022

Total Award Amount: \$25,000

WVU NIP Grants

Duration: 2022

Total Award Amount: \$25,000

Parkersburg Area Foundation

Duration: 2022

Total Award Amount: \$5,250

Milan Puskar Foundation

Duration: 2022

Total Award Amount: \$50,000

Thank you!

We would like to thank our benefactors who have generously contributed to our department and institute throughout this past year. In 2022, we received more than \$187,000 from alumni, friends, grateful patients, corporations and foundations in support of our mission.

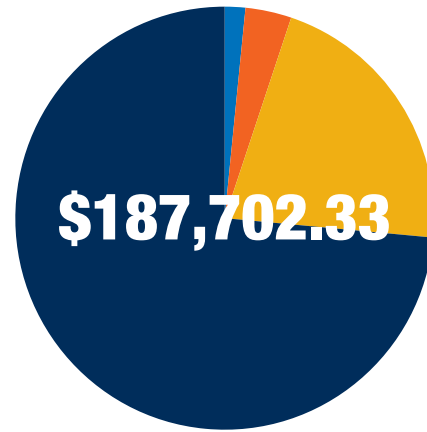
When you give to the WVU Department of Ophthalmology and Visual Sciences and the WVU Eye Institute, you give the gift of vision. Private giving can often make the difference in the success of our programs by providing funding for additional support for an established program, financing a necessary piece of equipment, supplementing research projects and supporting our ophthalmology students and residents. Philanthropic support allows us to provide transformative vision care to the people we serve now and into the future. We are grateful for your support; we could not accomplish what we do without your help.



Pangilinan Family Dr. Thomas Mauger (far left) poses with the Pangilinan family – including (from left) Caroline, Nelly and Joe – in the lecture hall named in recognition of their generous support for the WVU Eye Institute.

2022 Philanthropic Support

Total Philanthropic Support from January 1, 2022 to December 31, 2022.



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“The community-driven and small-town atmosphere that West Virginia provides makes it really easy for us as physicians to build bonds with our patients. WVU and this department really encourage us to do that, and that makes my job all the more rewarding.”

LINGO LAI M.D.
Assistant Professor



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