

SUMMER 2023

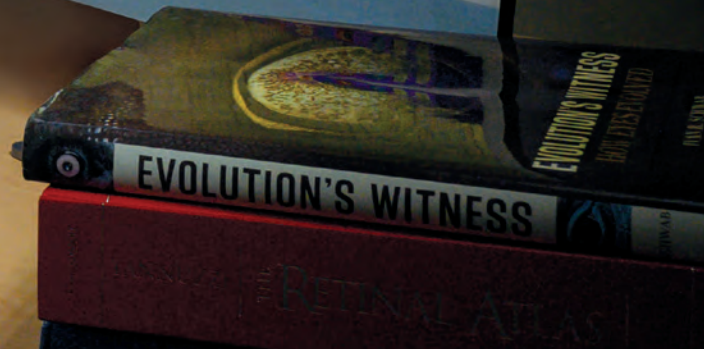
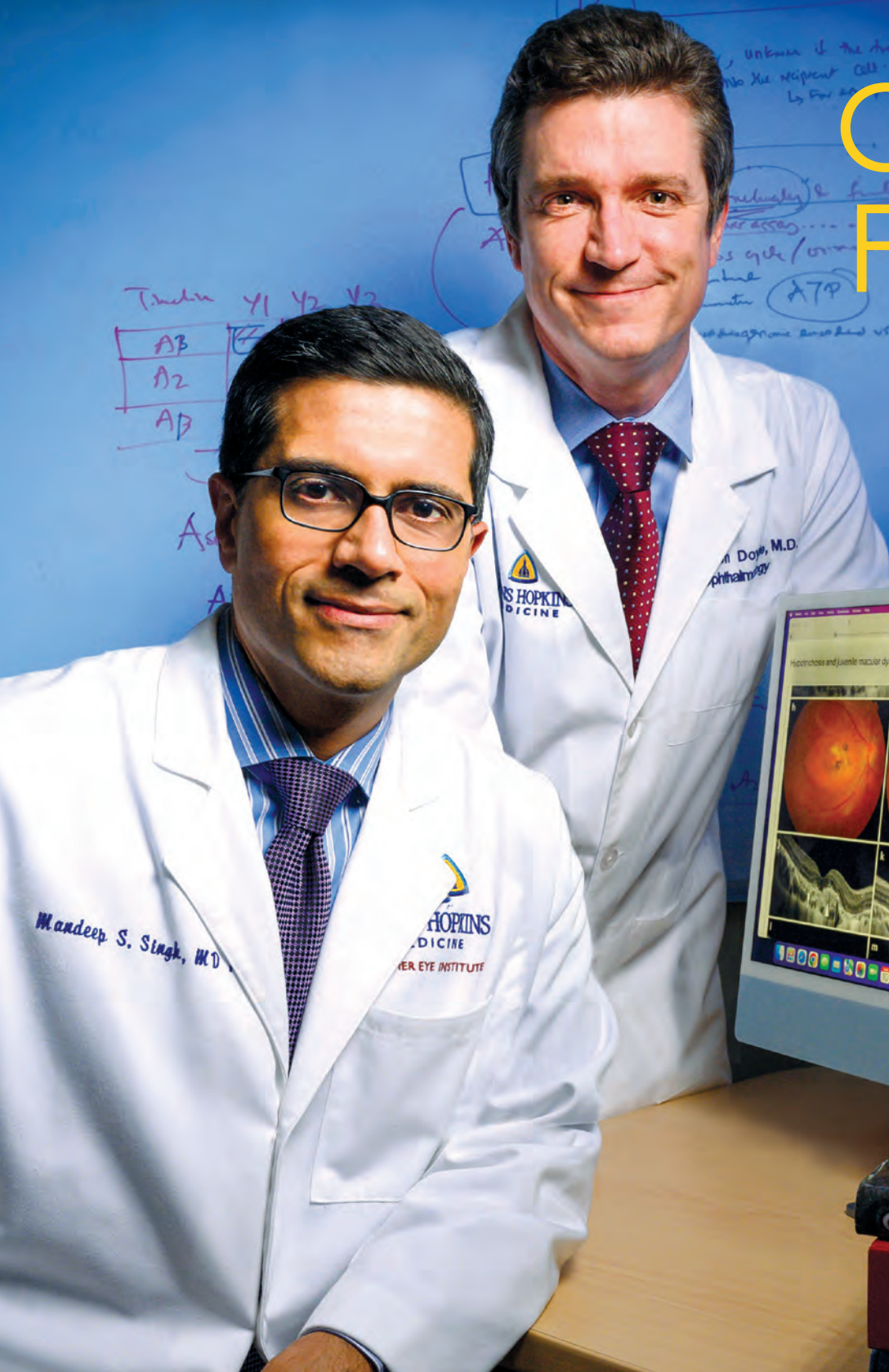
# Wilmer

Wilmer Eye  
Institute



## On the Frontier

Solving the  
Puzzle of Genetic  
Eye Disease



Amir Kashani



## Looking Forward

### CONSTRUCTION BEGINS ON NEW KASHANI LAB

In December, construction began on the Center for Retinal Imaging in Health and Disease, located on the fourth floor of the Maumenee Building. Led by **Amir Kashani, M.D., Ph.D.**, the Boone Pickens Professor of Ophthalmology, the center will house swept source-optical coherence tomography angiography devices, adaptive optics and high-resolution multispectral wide-field fundus cameras, among other state-of-the-art imaging technologies used for assessing retinal structure and function. The new space will also accommodate Kashani's interdisciplinary research group: Johns Hopkins trainees, physicians, engineers and scientists who are focused on understanding the retinal vasculature in health and disease. Nearly a century after its founding, the Wilmer Eye Institute continues to expand its capacity to serve patients and advance the field.

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**On the cover:** Mandeep Singh and Jefferson Doyle share a common goal of caring for patients with genetic eye disease — and working to discover new, cutting-edge therapies to treat it. Read more on p. 6.



## As I See It ...

Dear Friends,

**FOR PEOPLE LIVING WITH EYE DISEASE,  
THE ABILITY TO PURSUE THE THINGS  
THEY LOVE — AND EVEN SEE THE WORLD  
AROUND THEM — CAN BE A CHALLENGE.**

While many eye diseases primarily affect our older population, people with genetic eye disease may struggle lifelong with these and other challenges. These complex conditions often require ultra-specialized care by multiple clinicians, and individuals and their families who are living these realities may have dozens of medical visits each year in an effort to address the various manifestations and complications of their illness.

*Peter J. McDonnell*  
**PETER J. McDONNELL, Director**

In this issue of *Wilmer*, you'll meet two dynamic members of our faculty who have joined forces to not only provide coordinated care to patients and families with genetic eye disease, but also to uncover the very causes of the diseases and develop advanced treatments (p.6). They are driven by the tantalizing possibility of slowing, halting or even preventing these diseases from developing in the first place. Now, thanks to the vision and generosity of philanthropist and businessman Andreas C. Dracopoulos, these two young leaders also share the distinction of professorships bearing his name — professorships that provide support for the painstaking work of identifying the gene or genes implicated in disease, the mechanisms that drive it and, ultimately, therapies that target it.

In these pages, you'll meet patients who share compelling stories of challenges they have faced living with genetic and other complex eye diseases, and of the care they've received at Wilmer that is allowing them to live their fullest lives. You'll also hear from some of our other partners in philanthropy whose generous support, like that of Mr. Dracopoulos, has been foundational in our ability to advance care and discover cures. With their help, we are changing lives not only today, but for future generations.

# NEWS

## #1 — Again!

**Wilmer was ranked Best Overall Program and the #1 Research Program in the nation for 2022 in the *Ophthalmology Times* annual survey.** This is the third consecutive year that Wilmer received this recognition. In addition, Wilmer moved up to take the #2 spot for Clinical Care. The rankings reflect the opinion of ophthalmology leaders and program directors from across the nation.



*Right:* Green Spring Station Clinic Manager Davette Gray-Johnson; Medical Director **Henry Jampel, M.D.**, the Odd Fellows Professor of Ophthalmology; Assistant Administrator Kristy Davidson; Facilities Operations Administrator Ed Holman

## Growing Wilmer

**A long-planned expansion of the Wilmer Eye Institute-Johns Hopkins Medicine's Green Spring Station satellite clinic has been completed, providing patients with a more convenient experience and the potential for expanded services.** Now occupying the entire fourth floor of the Green Spring Station Pavilion II, the clinic has doubled in size to about 20,000 square feet, the number of exam rooms has increased from 21 to 35 and the optical shop is larger. The new open concept design provides five sub-waiting areas to ensure that patients are near where they need to go for appointments.

"Everyone — faculty, staff and patients — has been excited," says Davette Gray-Johnson, clinic manager at Green Spring Station for 15 years. She credits her team of faculty and staff members for their resiliency and hard work during the construction.

Planning for this expansion of the Wilmer Eye Institute's first satellite location started in 2017, and work began in 2019. The satellite office has about 40,000 patient visits per year, with projections showing an increase of 25% within the next five years. The expansion allows more doctors to practice at the location. In turn, the additional doctors make the clinic eligible for more specialized equipment, so more patients can receive care there.



## Arevalo, Singh Receive Macula Society Awards

**J. Fernando Arevalo, M.D., Ph.D.**, (top right) the Edmund F. and Virginia Ball Professor of Ophthalmology and chief of ophthalmology at Johns Hopkins Bayview Medical Center, was presented with the **J. Donald M. Gass Medal** during the Macula Society's annual meeting in Miami, Florida, in February. The medal, named for former Wilmer resident Don Gass, is awarded annually for outstanding contributions in the study of macular diseases. **Neil Bressler, M.D.**, (top left) the James P. Gills Professor of Ophthalmology, introduced Arevalo during the presentation.



Also during the meeting, **Mandeep Singh, M.D., Ph.D.**, the Andreas C. Dracopoulos Professor of Ophthalmology, was presented with the Young Investigator Award. **Morton F. Goldberg, M.D.**, the Joseph E. Green Professor of Ophthalmology and Wilmer director emeritus, nominated Singh for the award and provided a pre-recorded introduction during the ceremony. The two awards constitute 25% of all awards conferred annually by the society. Singh (bottom left) is pictured with Macula Society President Glenn J. Jaffe.

### FACULTY PROMOTIONS

**Bryn Burkholder, M.D.**  
Associate Professor

**Gislin Dagnelie, Ph.D., M.S.**  
Professor

**Laura Ensign, Ph.D.**  
Professor

**Amanda Henderson, M.D.**  
Associate Professor

**Mandeep Singh, M.D., Ph.D.**  
Associate Professor

**Uri Soiberman, M.D.**  
Associate Professor

**Ji Yi, Ph.D., M.S.**  
Associate Professor



## Scott Wins JHM Clinical Excellence Award

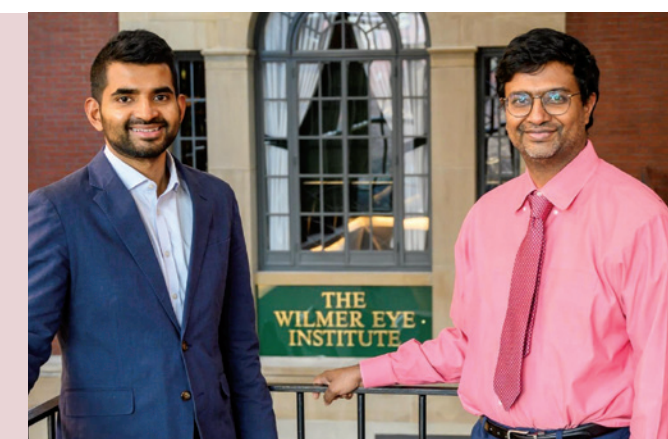
**Adrienne Scott, M.D.**, received the 2022 Clinical Excellence Award for Best Consulting Physician at The Johns Hopkins Hospital. A celebration of clinical excellence was held April 4 in Turner Auditorium to honor recipients of the Clinical Excellence Awards. Scott (center) is pictured with Senior Vice President of Johns Hopkins Physicians Jonathan Efron, Executive Vice President Kevin Sowers, CEO and Interim Dean of the Medical Faculty Theodore DeWeese and Executive Vice Dean Landon King.

## Wilmer-Columbia Wins Best of Howard 2022

Wilmer-Columbia was named Best of Howard 2022. Results of the annual Best of readers' poll are featured in *Howard Magazine* and *The Howard County Times*. This marks the ninth consecutive year Wilmer-Columbia has received this honor.

## Support for Promising Clinician-Scientists

**Pradeep Ramulu, M.D., Ph.D.**, (right) chief of Wilmer's Glaucoma Division, and **Jithin Yohannan, M.D., M.P.H.**, (left) assistant professor of ophthalmology in the Glaucoma Division, were honored with the **Dr. David L. Epstein Award** during the annual meeting of the Association for Research in Vision and Ophthalmology (ARVO) in April.



The award honors Johns Hopkins medical school graduate David L. Epstein, widely considered one of the most influential leaders in glaucoma and glaucoma research over the past 40 years. It was established by his family to perpetuate and honor his commitment to the scientific understanding and cure of glaucoma through the support of promising clinician-scientists in exceptional research environments. This marks the second time that Wilmer faculty members have received the award, which was first presented in 2016.

The \$100,000 award is given to a senior-level investigator to fund a research project that supports a mentee in the investigator's lab. Ramulu, the Sheila K. West Professor of Ophthalmology, will mentor Yohannan for his project, "Improving the Enrollment and Implementation of Glaucoma Neuroprotective Trials by Harnessing Deep Learning."

"Conducting clinical trials of drugs that preserve vision in glaucoma patients is challenging because the majority of patients with glaucoma lose sight slowly, and the tests used to measure visual function (visual fields) are variable. With this award, we plan to develop an artificial intelligence model that identifies the best patients to enroll in such trials so that we can demonstrate the effect of future vision-preserving drugs more quickly and with fewer patients," says Yohannan, who will present the results of his research project at the 2025 ARVO Annual Meeting.

## Five from Wilmer Named Top Doctors

Five Wilmer faculty members have been recognized by *Baltimore* magazine as **Top Doctors of 2022**: **Kraig Bower, M.D.**,

associate professor of ophthalmology in the Division of Cornea, Cataract and External Diseases; **Yassine Daoud, M.D.**, associate professor of ophthalmology in the Division of Cornea, Cataract and External Diseases; **Laura Di Meglio, O.D.**, instructor of ophthalmology; **Bryce St. Clair, O.D.**, instructor of ophthalmology; and **Fasika Woreta, M.D., M.P.H.**, the Eugene de Juan, M.D. Professor of Ophthalmic Education.



# Common Cause, Uncommon Mission

By Andrew Myers



Left: Mandeep Singh  
Right: Jefferson Doyle



The Wilmer Eye Institute provides untold opportunities for those with shared and overlapping interests to pool their talents, ideas and ideals to advance science and patient care. Following are the stories of two extraordinary clinician-scientists — one, a vitreoretinal surgeon, and the other, a pediatric ophthalmologist — with a shared interest in genetic eye diseases. Together, the two co-founded the Genetic Eye Disease Center at Wilmer, a unique center dedicated to meeting the complex needs of patients with genetic eye disease.

Now they share another distinction: professorships with a common name that will help to provide vital support for their twin goals of guiding patients and families through the maze of living with genetic eye disease and working to discover new, cutting-edge therapies to treat it.

## A Whole-Person Approach to Genetic Eye Disease

As co-founder of Wilmer Eye Institute's Genetic Eye Disease (GEDi) Center, **Mandeep Singh, M.D., Ph.D.**, sees many patients with rare, often untreatable eye conditions inscribed in their DNA. These patients have few places to turn for the comprehensive care such conditions demand. In many cases, the care he offers will extend across the span of his patients' lives, as he provides the clinical and emotional support they need to live with the challenges of their genetic illnesses.

Singh, the Andreas C. Dracopoulos Professor of Ophthalmology at Wilmer, and GEDi Center co-founder **Jefferson Doyle, M.D., Ph.D.**, a

pediatric ophthalmologist with a Ph.D. in genetics, conceived of the GEDi Center as a singular place that could treat complex genetic eye diseases and coordinate care with Wilmer team members and specialists across the Johns Hopkins Health System.

"The GEDi Center centralizes ophthalmic genetics services at Wilmer encompassing clinical care, research and education of our physician peers and of medical students who will be tomorrow's physicians," Singh explains.

With many genetic diseases, symptoms of the eye are only the entry point to care. The diseases can and do affect other systems within the body. Patients with

Marfan syndrome (see Caden Crawford's story, p. 10), for instance, caused by a mutation in the genes encoding the body's connective tissues, often experience profound vision loss, but also damage to heart, skeletal, circulatory and other systems. Retinitis pigmentosa (RP), on the other hand, can be associated with Usher syndrome, which combines RP's vision loss with hearing loss.

At the Wilmer Genetic Eye Disease Center, these patients find allies who understand the unique complexities of their cases. In addition to offering clinical care for each subspecialty of ophthalmology (including cornea, glaucoma, neuro-ophthalmology, pediatrics and retina), the center provides genetic counseling services as well as low vision services to assist patients' functioning in daily life.

The GEDi Center's services include a Wilmer first: in-house genetic testing. Prior to the center's creation, Wilmer had to refer patients for genetic testing, a process that could take 18 months or more.

"If Wilmer is to be at the forefront of genetic disease research and clinical care, you can't have patients waiting a year and a half to find out their diagnosis and if they're eligible for a clinical trial,"

Doyle says. "The GEDi Center has cut wait times to just three weeks."

On the research front, one area GEDi Center researchers have focused on intently is gene discovery to reveal the mutations that cause the diseases and, more critically, to look deeper at what Doyle refers to as genetic modifiers — the second and third genes that may determine disease severity and, potentially, what therapies might work best for a given patient.

Singh notes that individualizing care is an important component of the GEDi Center mission of treating the whole patient, not just the condition — an approach and philosophy he learned from his mentor, **Daniel Finkelstein, M.D.** Even before he joined Wilmer in 2015, Singh knew of Finkelstein, his predecessor and the inaugural holder of the Andreas C. Dracopoulos Professorship, endowed by philanthropist Andreas Dracopoulos.

"Dr. Finkelstein's blend of skill, knowledge and compassion were what made him such a special ophthalmologist, a special human being, and why in trying to pay tribute to his great career and legacy I endowed a

professorship to support his important work," says Andreas Dracopoulos.

Indeed, Finkelstein, who died in 2022, was an ophthalmologist of the highest order and a profoundly caring physician. Over a half-century career that began in Wilmer's residency program in 1970, Finkelstein shaped a reputation for patient care, science and leadership. Often, he was one among a few specialists treating the rare genetic disorders behind eye diseases such as Stargardt, RP, choroideremia, retinoschisis and others. He was deeply attuned to the ethical aspects of his work. A member of the core faculty of the Johns Hopkins Berman Institute of Bioethics, Finkelstein also held an M.A. in theology from St. Mary's Seminary.

Such was Finkelstein's reputation that Singh reached out to him in the very first week of his appointment to the Johns Hopkins faculty. Singh remembers asking a simple question: What makes an excellent physician?

"He didn't talk about training or technique, but about human dignity, morality and ethics," Singh says. "We build long relationships with our patients who have chronic conditions for which there often are not cures currently. Dan Finkelstein understood how the manner of his care affected a patient's whole life."

Singh and Finkelstein would partner on pioneering research in stem cells and cutting-edge gene therapies, including laboratory research and clinical trials. Singh says Finkelstein's focus on ethics and morality has touched every patient.



Daniel Finkelstein (left) and Andreas C. Dracopoulos

"I'm extremely interested in the bioethics of recruiting patients into trials," Singh says. "We need to think about their vulnerability. We owe them an honest appraisal of their prospects while reinforcing their critical role in advancing knowledge with the potential to improve treatments, possibly for themselves, yes, but more significantly for other patients in the future."

As Finkelstein eased into retirement, Singh took on the care of many of his long-term patients. In 2023, a year after his mentor's death, Singh stepped into Finkelstein's shoes as the Andreas C. Dracopoulos Professor of Ophthalmology.

"Dr. Singh is an ideal physician to pick up the mantle of Dr. Finkelstein's work and to carry it into the future," says Dracopoulos.

Finkelstein's philosophy continues to influence the GEDi Center's patient-centered approach. "Every time I walk into my clinic, I think of Dan Finkelstein and the honor and dignity he brought to so many," Singh says of the legacy he now inherits. "It is among my greatest fortunes to have met and learned from him."

"Dr. Finkelstein understood how the manner of his care affected a patient's whole life."

— MANDEEP SINGH



Christy and Caden Crawford at Baltimore's Inner Harbor

## Life Through a Different Lens

Caden Crawford is not unlike many 20-year-olds. He likes video gaming and computers, and he recently earned a college degree in computer science. Caden also has Marfan syndrome, which is caused by a mutation in one of the genes that encode a protein critical to the connective tissues in his body. Today, patients with Marfan syndrome usually live normal lifespans because of advances in aortic surgery. But the symptoms are chronic and often widespread. Caden feels the effects of Marfan in his heart, in his bones and, quite acutely, in his eyes.

"I realized how bad my eyesight was getting when I was in high school. I'd get stronger glasses and move to the front of the class, and I couldn't even read the board most of the time," Caden says of the severely declining eyesight that brought him and his mother to the Wilmer Eye Institute.

"Genetic diseases, like Marfan syndrome, require a remarkable breadth of care that can't easily be found in one place," says **Jefferson Doyle, M.D., Ph.D.**, a pediatric ophthalmologist, surgeon and co-founder, with **Mandeep Singh, M.D., Ph.D.**, of Wilmer's Genetic Eye Disease (GEDi) Center. "Many patients spend years going from doctor to doctor, hospital to hospital, seeking out specialists for each affected system."

In his young life, Caden had already endured spinal surgery and a heart valve replacement. The longstanding problems with his eyes included a severe ectopia lentis — lens displacement — reducing his vision to the point that his eyesight fell

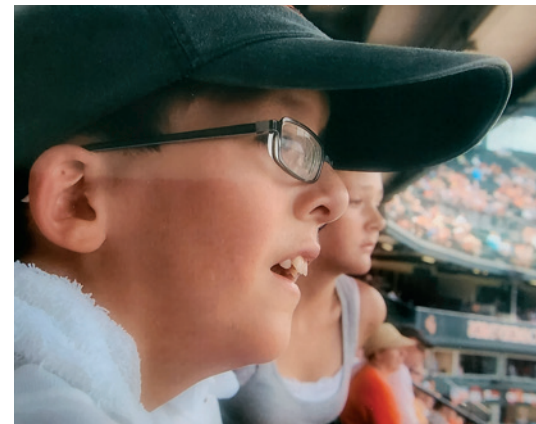
in the highly myopic range even with the strong glasses he was never without. He was even known to wear his glasses to bed.

"Caden's care was always sort of a balancing act with a lot of different doctors," says his mother, Christy Crawford. "We couldn't find one group of doctors who did it all the way Wilmer and Johns Hopkins could. We now see several specialists at Hopkins all coordinated through the Wilmer GEDi Center and Dr. Doyle."

Like Caden, many of the GEDi Center's patients have symptoms from birth, and their diseases often have no cure — at least not yet. They will require a lifetime of care. "In that respect, Dr. Singh and I complement one another, as we cover both pediatric and adult ophthalmic care," Doyle says of the partnership that has proved so fruitful in delivering the whole-patient, long-term care GEDi is known for. "Mandeep cares for parents and grandparents. I see the kids."

Doyle's expertise was recently recognized when he was named the recipient of the Andreas C. Dracopoulos and Daniel Finkelstein M.D. Rising Professorship in Ophthalmology. Such rising professorships, launched at Wilmer in 2021, provide seven years of funding for early-career physician-scientists who show exceptional promise.

The professorship was endowed by philanthropist Andreas Dracopoulos to honor longtime ophthalmologist, the late Daniel Finkelstein, M.D., a beloved leader at Wilmer for 50 years. Finkelstein was known for caring for patients with the rarest cases with equal parts compassion and resolve.



From left to right: Caden takes in his first Orioles game with sister Kaelin at Camden Yards. Brothers Cameron and Caden enjoy some down time. Caden on his computer, a favorite pastime.

"This singular ability to treat patients with complex and rare genetic conditions is what sets Wilmer apart. But finding specialists with the training and patient-facing skills to treat the whole person is almost as rare," Dracopoulos said of his motivation for supporting the rising professorship. "When you see someone like Dr. Doyle, with that key combination of skill, promise and manner at such a relatively young age, you want to make sure they get the early-career support they need to accelerate their careers."

In GEDi and Doyle, the Crawfords found a single center and a single doctor able to coordinate the care of Caden's eyes, heart and bones within the Johns Hopkins medical family. GEDi's one-stop proposition proved so compelling to Caden's mom that the four-times-yearly, 18-hour roundtrip drives from Indiana were more than worth it.

"Baltimore became a second home. We would just make a small vacation out of the trips east," Christy recalls. "I don't know what we would have done without GEDi."

What impressed the Crawfords most was Doyle's caution. Rather than rush to

surgery, Doyle stepped back and analyzed Caden's many complicating factors. Doyle diagnosed Caden with significant dislocations of both lenses, early-onset cataracts and heightened surgical risk to his retinas. Caden's history of spine and heart surgeries required that he be on a blood thinner, but that increased the risk of intraoperative and postoperative bleeding with his eye surgeries.

Doyle recalls much concern over Caden's anticoagulant regimen and the potential effects of anesthesia. Eventually, however, it was clear that the need for surgery outweighed the risks. In the summer of 2021, Doyle and Singh jointly performed sequential vitrectomies, lensectomies and the implantation of new synthetic lenses — first one eye, then when it was clear that surgery was a success, the second followed a month later. Eighteen months post operation, Caden now enjoys 20/30 vision in both eyes.

"He doesn't even wear glasses," Christy says. "It's been a complete turnaround."●



In 2006, **Nakul Shekhawat, M.D., M.P.H.**, a 19-year-old college student at the time, spent a few weeks volunteering at an ophthalmology hospital in an impoverished rural area of northern India. Cataracts are the leading cause of blindness in India, and Shekhawat saw firsthand how having access to eye care, particularly cataract surgery, was transforming the lives of rural villagers.

Left: Nakul Shekhawat

By Jennifer Walker

# New Rising Professorship Helps Turn Big Plans into Reality

Now, as the inaugural recipient of the Stephen F Raab and Mariellen Brickley-Raab Rising Professorship, Shekhawat, an assistant professor of ophthalmology at the Wilmer Eye Institute, will continue this work. He has partnered with Aravind Eye Hospital in India — as well as biomedical engineers and public health researchers at Johns Hopkins — to develop a telemedicine platform that will provide virtual eye screenings to rural residents in India. This will ease the significant travel burden for patients while providing much-needed ophthalmology care.

“Rising professorships enable us young researchers who are at the beginning of our careers and starting to make big plans to turn these plans into a reality,” Shekhawat says.

The Stephen F Raab and Mariellen Brickley-Raab Rising Professorship is one of six rising professorships at Wilmer. These awards, launched in 2021, aim to accelerate the careers of Wilmer’s next generation of leaders

by providing seven years of funding for promising young scientists to undertake large-scale research projects.

Stephen Raab, who has been a member of Wilmer’s Board of Governors for more than 40 years, discovered Wilmer through a friend, **Arnall Patz, M.D.**, the director of the Wilmer Eye Institute from 1979 to 1989. Raab, who has type 1 diabetes, and Patz were co-chairs of a Juvenile Diabetes Research Foundation conference in 1978 called “Workshop in New Research in Diabetic Retinopathy.” Raab was familiar with Johns Hopkins — he has been a fan of the Johns Hopkins lacrosse teams since the 1960s — so when Patz asked him to join Wilmer’s board in the 1980s, he says he happily accepted.

Then last year, when Wilmer director **Peter J. McDonnell, M.D.** presented the opportunity to support a rising professorship, Raab and his wife, Mariellen Brickley-Raab, who is also a member of Wilmer’s Board of Governors, were drawn to do



so. Brickley-Raab, a former dental hygienist, values Wilmer's research-based approach to care and wants to support young professors who are adding to that body of work. And Raab has had positive experiences as a long-time patient at Wilmer.

"As a diabetic, you have a real chance of losing your vision to the disease," says Brickley-Raab. "If Steve hadn't met Dr. Patz, he wouldn't have learned as much about Wilmer as he has, and he wouldn't have had the expertise that we've had. Steve, in my mind, has always wanted to do something for Wilmer because he felt that they've given us and so many others so much in terms of quality of sight."

"I have benefited from the cutting-edge research and clinical skills of multiple Wilmer doctors over my years as a patient," adds Raab. "They have extended my years with sight and improved my quality of life so greatly. So we are overjoyed to fund this rising professorship, which allows early-career investigators to focus more of their energy on research and less on funding."

As the inaugural recipient of this rising professorship, Shekhawat is also focusing on a second area of research: improving ophthalmologists' ability to diagnose, assess and treat corneal infections, the most common cause of corneal blindness in the world.

First, corneal infections are difficult to identify because they could be caused by bacteria, fungi, viruses or even parasites.

The traditional way to diagnose these infections involves swabbing the surface of the infected cornea, then putting that sample of tissue on a culture plate. The type of microorganism that grows on the sample will indicate the cause of the infection and help guide subsequent treatment. However, microorganisms only grow on the sample in about 60% of cases, leaving ophthalmologists unable to diagnose the cause of infection in the other 40% of cases.

"Delayed diagnosis is one of the biggest risk factors for blindness from infections, so this ends up being very consequential for patients in terms of visual outcome," Shekhawat says.

To address this, Shekhawat, along with his colleagues in informatics and microbiology at Johns Hopkins, are working to develop more sensitive tests that can be used to perform genomic and genetic analyses of the samples. The goal is for these tests to be able to detect DNA and RNA from microorganisms, helping ophthalmologists to diagnose corneal infections much sooner.

Then, in regards to assessment, corneal infections, which look like white spots under the microscope, are challenging for ophthalmologists to accurately and consistently measure. To address this, Shekhawat is looking at how cutting-edge advances in corneal imaging, including three-dimensional scans of the cornea, could be applied to help ophthalmologists more

accurately measure corneal infections and patients' responses to treatment. "In the longer term, this will enable us to move new medicines through the drug development and FDA approval pipeline, so we have newer treatments available for patients that are hopefully more effective," he says.

Shekhawat is grateful to the Raabs for supporting the rising professorship, which provides funding for a longer period of time than most grants.

"The short-term nature that seems to define a lot of research funding can hamper our ability to dream big and make substantive changes to our field," Shekhawat says. "The amount of sustained support that the rising professorship provides for hiring staff to conduct clinical research, perform statistical analyses and help recruit patients for clinical studies is a huge game-changer." ●



Stephen Raab (right), and Mariellen Brickley-Raab

"I have benefited from the cutting-edge research and clinical skills of multiple Wilmer doctors over my years as a patient. They have extended my years with sight and improved my quality of life so greatly. So we are overjoyed to fund this rising professorship, which allows early-career investigators to focus more of their energy on research and less on funding." — STEPHEN F RAAB

# Getting His Life Back

Don Kalil began noticing a change in his vision in the spring of 2021. By the end of that year, he couldn't drive. Then a few months later, while on vacation in Italy, "I realized I couldn't walk without having somebody by my side," says Kalil. "Eventually, I couldn't cut my own fingernails. I couldn't go into the refrigerator and recognize what was in there to eat. It was pretty bad."

By Jennifer Walker

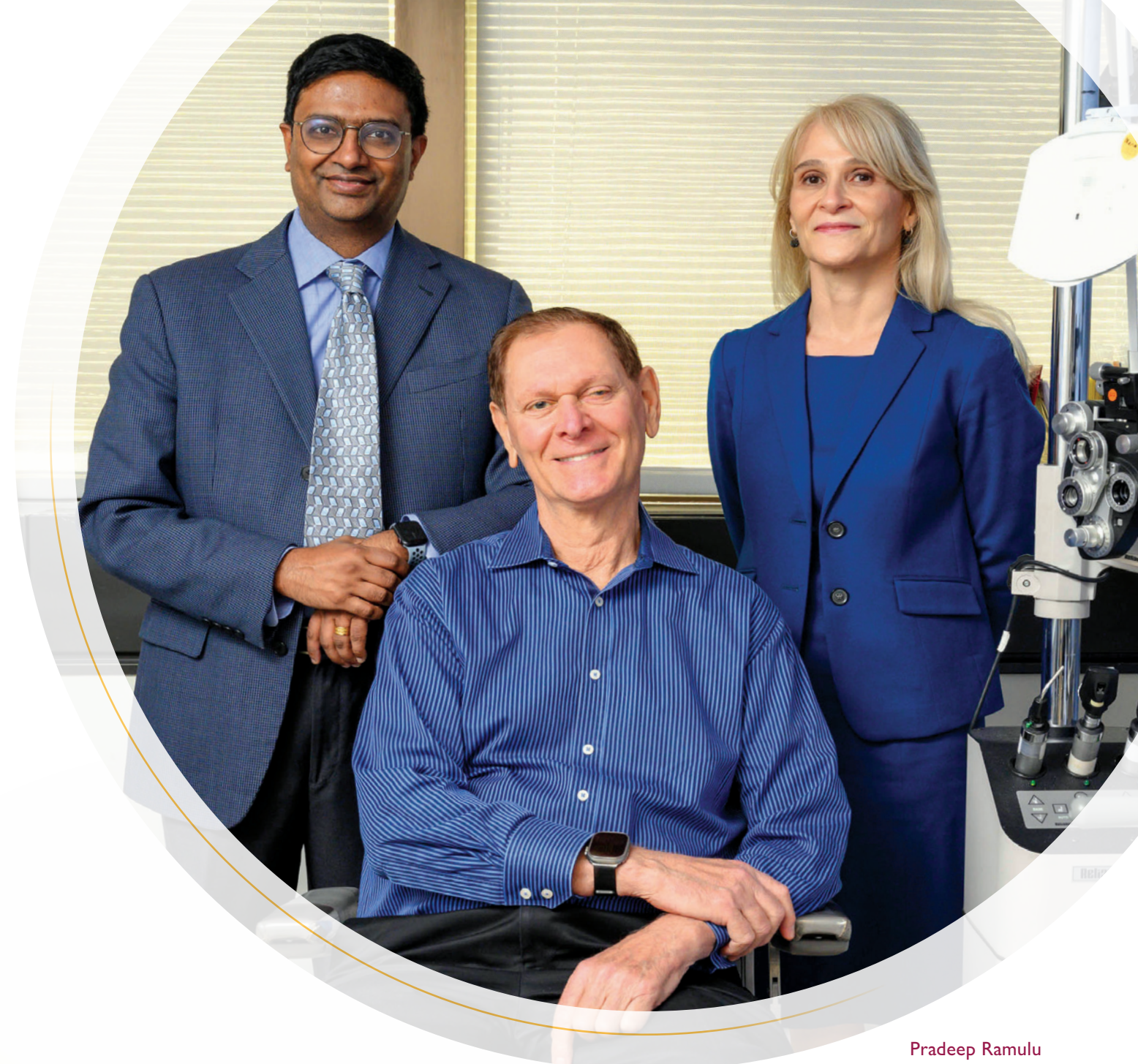
Kalil was no stranger to vision challenges. The difference this time was the severity of his vision loss.

In 2002, when he was about to have LASIK eye surgery, Kalil's ophthalmologist noticed he had high pressure in his left eye. He was diagnosed with glaucoma and underwent multiple surgeries to bring down the pressure. In 2011, he had cataract surgery to replace his cloudy lens. But a few months later, Kalil's vision was worse than ever. He felt like he was looking through a spoonful of petroleum

jelly in his left eye. He began to search for a place that could help him maintain sight in his right eye and perhaps even regain sight in his left. In 2012, that search led him to the Wilmer Eye Institute.

At Wilmer, he had four corneal transplants, several surgeries for glaucoma, removal of a cataract and interventions to address swelling in the retina. His eye conditions are complex, and he has a team of three Wilmer ophthalmologists — specializing in cornea, glaucoma and retina — working together to address his various diagnoses.

"Glaucoma has been Mr. Kalil's primary problem. It has caused the need for surgeries, which has caused his corneal issues and his retinal issues," says **Pradeep Ramulu, M.D., Ph.D.**, chief of the Glaucoma Division and the Sheila K. West Professor of Ophthalmology. "On the one hand, we can't let his pressure get too high or he could lose his vision to glaucoma. But at the same time, the things we do to control the pressure risk other parts of his eye. We've been fortunate to be able to manage these problems together as a group."



Pradeep Ramulu and Esen Akpek with Don Kalil

"We've been fortunate to be able to manage these problems together as a group."

— PRADEEP RAMULU

Below: Don Kalil and his partner, Susan Melis, on Italy's Amalfi Coast





Above:  
Mandeep Singh  
with Don Kalil

“Having three different doctors at Wilmer is an advantage because we communicate quickly, and we’re able to perform diagnostic testing from all three points of view,” says **Mandeep Singh, M.D., Ph.D.**, a retina specialist and the Andreas C. Dracopoulos Professor of Ophthalmology, who collaborates with Ramulu and **Esen Akpek, M.D.**, a cornea specialist and the Bendann Family Professor of Ophthalmology, to provide Kalil’s care.

Kalil’s conditions were managed well enough that he and his partner, Susan Melis, were able to pursue an active lifestyle. Since his retirement in 2017, they have had close encounters with buffalo, cougars, elephants, giraffes and lions while on safari in Kruger National Park in South Africa; hiked up hundreds of steps in the tight quarters of ancient pyramids in Egypt; and toured Italy, from the striking blue waters of the Amalfi Coast to the lemon and orange groves of Sorrento.

By 2020, however, Kalil had developed a cataract and high pressure in his right eye. To address this, Akpek performed cataract surgery. During the same session, Ramulu placed a stent to create a path for the fluid to drain to address the elevated pressure. A year later, Ramulu also performed surgery to place a tube in the eye that would drain excess fluid to a reservoir outside of the pressurized portion of the eyeball. Throughout this time, Singh used medications to treat Kalil’s retinal swelling caused by inflammation and eye pressure fluctuations. After these interventions, Kalil could see out of his right eye — that is, until his right cornea failed.

And that was the ultimate cause of his noticeable vision decline in 2021. “That trip to Italy, I thought that was it, that I was done traveling. There was a lot I wanted to see and do, and I couldn’t,” says Kalil. He and Melis canceled a 10-day cruise on the

Danube River in Europe that they had been planning for nine months.

“Our life changed pretty drastically and very quickly,” says Melis. “We just began to focus on helping Don get through a day safely. He had a very hard time with spatial perception, for example. I painted ladybugs on the concrete steps outside so that Don could see from one step to the next.” They curtailed many activities, from bike riding to traveling.

Kalil describes Melis as his “eyes” during this time, and they both emphasized the importance of retaining their sense of humor and hope for the future — hope based on consultations with Kalil’s specialists at Wilmer.

“Dr. Akpek had a plan,” says Kalil. He would need a partial thickness corneal transplant in his right eye. But first, Akpek wanted to address his left eye. “I at least wanted to get him somewhat better vision in his left eye so he could function and take care of the right eye and himself after surgery,” she says.

By this time, Kalil’s entire left cornea was failing: He would need a full thickness corneal transplant. He was prescribed immunosuppressants to decrease the possibility that his body would reject this third corneal graft.

After Kalil was on the medication for three months, Akpek could perform the full thickness corneal transplant. During this procedure, the entire cornea is removed and replaced with a donor cornea. Several weeks later, she

performed a partial thickness corneal transplant on Kalil’s right eye. During this procedure, Akpek removed the inner lining of the cornea, then replaced it with donor tissue to restore vision.

Today, Kalil is in a good place with his vision. He can read and drive again. He continues to take immunosuppressants along with steroid eye drops to prevent his corneal transplants from failing. He will also soon get a contact lens to help improve the vision in his left eye, a common next step after a full thickness corneal transplant.

“It was life changing — to be able to do almost nothing without help to now being able to legally drive and travel and get back to my projects and the things that I love,” says Kalil.

He and Melis are also looking forward to their first big trip since his eyesight has been restored: a cruise through Switzerland, Germany and the Netherlands. About his patient experience at Wilmer, Kalil says: “The doctors truly care about you as a person. They gave me my life back.” ●



Above: With his vision now restored, Kalil and Melis look forward to returning to the travel adventures they had so enjoyed before Kalil’s eyesight worsened.

# Finding the Right Path

By Jennifer Walker

On a Thursday evening in the summer of 2022, Patrick Richard, Ph.D. experienced a sudden headache and severe eye pain — the worst pain he had felt in his life. He would later learn that he had suffered an attack of acute angle-closure glaucoma, a medical emergency that can lead to blindness within a few days without treatment.

The attack was an intense experience and Richard developed a close clinical relationship with **Jella An, M.D., M.B.A.**, associate professor of ophthalmology. “At my age, I’ve interacted with a number of physicians in different specialties, and I do not remember having such a positive experience,” says Richard, who is director of the Health Services Administration Division at Uniformed Services University of the Health Sciences in Bethesda, Maryland.

Richard first came to Wilmer about six months before that fateful Thursday. Since 2019, his vision hadn’t been as sharp, and his glasses weren’t helping. At Wilmer, Richard learned he had developed a cataract, or a clouding of the lens, in his left eye. In this case, the cataract had caused his lens to become

larger, and it was closing off the angle, or drainage system, in that eye, increasing the risk of angle-closure glaucoma. This relatively underdiagnosed condition, often caused by the growing size of the lens (in the form of the cataract, in this case), progressively narrows the drainage angle. Once the drainage angle completely closes, fluid gets trapped, which leads to high eye pressure.

“This was the first time I was learning about glaucoma and cataracts,” he says. “I’d been having all these issues with my eyes, and they were never diagnosed until I came to Wilmer. That’s when I felt like I was on the right path.”

After this diagnosis from a Wilmer optometrist, Richard was referred to An, who initially had good news: His angle-closure glaucoma could be addressed by cataract surgery, which

Patrick Richard and Jella An

“I’d been having all these issues with my eyes, and they were never diagnosed until I came to Wilmer. That’s when I felt like I was on the right path.”

— PATRICK RICHARD

would also improve his vision that had been affected by the cataract. During the surgery, An would remove his hazy natural lens and replace it with a clear artificial lens that would also be thin enough to create space to open the angle. Richard scheduled the surgery for the fall of 2022.

Then that summer, Richard, who had been taking two medications for glaucoma, woke up on a Wednesday and noticed some pain in his left eye. He went to urgent care and then the emergency room, and was diagnosed with high pressure again. Richard received a third glaucoma medication, and he made an appointment with An for Friday morning.

It was the next day that Richard suddenly felt the most horrible headache he had ever had. The acute angle-closure attack — a relatively rare development that affects less than 1% of the population — caused his eye pressure to soar, suddenly reaching 50 when it should be in the mid-teens.

Richard spent all day that Friday at An’s clinic. He urgently needed cataract surgery, but An first needed to address

his swollen cornea, a complication of the attack. “When the cornea swells, the view gets very hazy, so you can’t really look through the eye and do the cataract surgery safely,” she says. “That was a limiting step because we wanted as clear a view as possible while also not delaying the surgery any more than necessary.”

At the clinic, An went through every treatment to lower Richard’s eye pressure, including performing laser surgery by cutting a small hole in the corner of the iris to allow the trapped fluid to flow into the angle. But because Richard’s angle was completely closed, this only reduced his pressure to around the mid-30s. An prescribed drops to reduce the inflammation in Richard’s eye, and, within a week, the swelling had subsided enough that she could perform the surgery.

But there would be another complication. During the surgery, Richard’s cornea swelled up again. “I couldn’t see anything inside of the eye,” An says. In cataract surgery, ophthalmologists need to make sure they don’t puncture the membrane that divides the vitreous and the anterior chamber, as this could cause vision-threatening complications,

such as retinal detachment and infection. But because An couldn’t see the membrane clearly, she needed to rely on her past surgical experiences to guide her through the surgery.

“I had to imagine where my hands are normally supposed to be and where my instruments are supposed to be, and observe the dynamics of the fluid,” says An, who later performed cataract surgery on Richard’s right eye as a preventative measure. “Despite the challenges, the surgery went well, without complications. Without the natural lens, the angle opened up, and his pressure went down. His vision was restored to baseline without the need for any medication.”

An was also surprised and elated to see that Richard’s optic nerve wasn’t damaged despite days of very high eye pressure — and that he no longer had glaucoma. “That was a celebratory moment,” she says. “After that experience, he became a very special patient in my mind.”

Richard appreciates An’s approach to treating her patients like people instead of only seeing them as a diagnosis. “From a clinical standpoint, she’s very talented, and she pays attention to details,” says Richard, whose wife, Nancy Richard, also became one of An’s patients after this experience. “But there is also this feeling that you’re not just a patient, that she sees me. I feel very lucky and fortunate that I went to Wilmer.” ●

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Your donations directly impact the Wilmer Eye Institute’s mission to transform medical outcomes in the field of ophthalmology through collaboration and innovation, resulting in compassionate, leading-edge, patient-informed care.

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# A Visionary Bequest to Support Low Vision

By Jessica Wilson



Elaine Diggs

Elaine Diggs still has the letter of appointment she received from the late **Maurice Langham, Ph.D.** when he hired her as a research assistant at the Wilmer Eye Institute in 1969. Langham was the head of research at Wilmer, which he had joined in 1959 and from which he retired in 1992. “He gave me a lot of responsibility. I was trained at the bachelor’s degree level, but I had the opportunity to co-author a couple of papers with him, which I still have copies of,” Diggs says. “I spent five years there, which was really significant and very engaging.”

This came to mind last year when she made a New Year’s resolution to establish an estate plan. “And for once, I actually kept a New Year’s resolution,” says Diggs. “I wanted to develop a legacy gift similar to if you’ve had a very positive experience where you studied, perhaps you make a donation. I had a very good experience at Wilmer.” That, as well as advice from a lawyer to choose one cause about which she was very passionate rather than a long list of worthwhile charities, led her to leave a bequest to Wilmer. She chose to dedicate her legacy to advancing research and clinical care for people with low vision.

“This transformational gift is intended to support the development of low-vision clinical specialists, including optometrists, ophthalmologists and allied health professionals,” says **Judith Goldstein, O.D.**, chief of the Lions Vision Research and Rehabilitation Center at Wilmer and an associate professor of ophthalmology.

When Diggs visited Wilmer to explore the possibility of supporting the Lions Vision Research and Rehabilitation Center, she met occupational therapist Kristen Shifflett and was surprised — and gratified — to learn there were specialized occupational therapists who worked with people with vision loss. Diggs’ hope is that the bequest will, among other goals, raise the profile of the low vision program so that more people are aware of and have access to low vision services.

Her bequest will support the formation of the **Elaine M. Diggs Professorship in Ophthalmology**, which could be awarded to an occupational therapist, optometrist or ophthalmologist. “This is the first bequest that would endow support and honor the essential role of occupational therapists in providing clinical care as a part of a vision rehabilitation team,” says Goldstein.

“It is so humbling that a former staff member at the Wilmer Eye Institute has the foresight and vision to directly support this specialized rehabilitation, which we offer when medical or surgical therapies cannot restore sight,” says Goldstein. “It demonstrates an understanding of the work we do in uplifting the quality of life and preserving independence. Most importantly, this gift has real value to improving people’s everyday lives in meaningful ways. That is the most gratifying part of both this gift and this work.”

Diggs inherited a concern for vision from her mother. Diggs’ grandmother had glaucoma. Because of this, her mother was very diligent in caring for the eye health of her children. In addition, her mother supported the National Federation of the Blind. This family

connection is not the only reason for her bequest, though, since she personally experienced partial vision loss several years ago and became a Wilmer patient.

“We’re all one human family, right? Do not ask for whom the bell tolls; it tolls for me. I’ve been blessed in so many ways, and I’m not going to be here forever. I would rather have the wealth I have accrued on my own or that I have inherited do good for the world. It ties in very much with my belief in our shared humanity,” says Diggs. ●



## VISION FOR THE FUTURE

In 1925, the nation’s first university eye clinic to combine eye patient care, research and teaching was established, thanks to the generosity of friends and former patients of William Holland Wilmer. Your gift will ensure Dr. Wilmer’s legacy continues through education, treatment and pioneering research. Consider these opportunities:

**LEAVE A LEGACY** Naming Wilmer as a beneficiary of your will, retirement account, or other estate plans will cost you nothing in your lifetime, while positively impacting future generations.

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*Seek advice from a tax professional before entering into a gift annuity agreement.*



Left to right: Wilmer Director Peter J. McDonnell, Director Emeritus Morton F. Goldberg, Rick and Sandy Forsythe and Dean Edward Miller at the groundbreaking for the Robert H. and Clarice Smith Building, 2007

## Dear Friends,

In its 98 years of existence, the Wilmer Eye Institute has benefited from the extraordinary support of many extraordinary people, beginning with Aida Breckinridge, who led the charge to raise the funds required to establish the institute that is today known throughout the world.

During the tenure of **A. Edward Maumenee**, Wilmer's third director, the Wilmer Advisory Council (today known as the Wilmer Board of Governors) was established. Populated by leaders from the worlds of business, law, finance, the arts, academia, public service and the health sciences, this board has provided those in the position I currently occupy with generous amounts of wisdom, experience, valuable advice, technical know-how and philanthropic support.

Over generations, the board has had a succession of chairs who are leaders among leaders. This year, I am sad to say, we lost one of those leaders with the death of Rick Forsythe in December 2022.

Rick, along with his wife, Sandy, agreed to serve as the first chairs of the Wilmer board during my time as director. It is hard for me to detail the impact of Rick's time in this role. A self-made man with an outsized personality, Rick left his position at IBM to start his own technology firm in Chicago. As his firm grew, Rick became a pillar of the Chicago business community. To dine with Rick and Sandy at their favorite eatery was to attend a master class in networking, as he bantered with and charmed the staff, all of whom he acknowledged by name. He struck me as having the gift of being able to make everyone he interacted with feel like a friend.

Later in life, Rick suffered from macular degeneration and sought care at Wilmer. Impressed by the doctors he met here, Rick and Sandy supported a number of young faculty members who were conducting research into his disease and who are today recognized as leaders in the field. Although his background was not in the life sciences, it was remarkable to watch Rick question

these physician-scientists about their work. He came to know the doctors, technicians and nurses at Wilmer well and never failed to express his appreciation to everyone who participated in his care.

During Rick and Sandy's tenure as board chairs, spanning from 2003–2010, Wilmer — which was spending more on research than any other department of ophthalmology — ran out of space to conduct research. Rick and Sandy made the first major gift that started the ball rolling to make the 207,000-square-foot Robert H. and Clarice Smith Building a reality. Rick told me that having a building with open architecture to facilitate interactions and collaborations would, based upon his experience with his own company, increase Wilmer's research productivity by 15%. Within a year or two of the building opening, we had increased research productivity by over 30% — more than double Rick's prediction. Today, a decade after the building opened, our research productivity has tripled compared to before we had this state-of-the-art facility we built during Rick and Sandy's leadership.



Sandy and Rick Forsythe

**RICK AND SANDY WERE NOT DONE. IMPRESSED BY THE FACT THAT MANY YOUNG TRAINEES WERE BURDENED BY LARGE LOANS FOR THEIR EDUCATIONS AND WERE OF NECESSITY PASSING UP LOWER-PAYING CAREERS IN ACADEMIC MEDICINE, THEY ENDOWED A NEW FUND, THE FORSYTHE NEXT GENERATION FUND, TO HELP PAY THE STUDENT LOANS OF INDIVIDUALS WHO JOINED THE WILMER FACULTY AND RECEIVED OUTSTANDING ANNUAL PERFORMANCE REVIEWS. TODAY, THAT FUND EXCEEDS \$1 MILLION.**

We continue to hold Rick and his family, including Sandy and their daughter Mary, close. Sandy, who received our prestigious Aida de Acosta Root Breckinridge Award in 2014, remains on our board today.

My Wilmer colleagues and I will always be grateful to Rick and Sandy Forsythe for all they did during my time as Wilmer's director to strengthen our institute. It is my fervent hope and belief that, toward the end of his life, Rick knew how much impact he had on this institution. Their names appear throughout the institute, acknowledging support for the "Sandy & Rick Forsythe Pavilion for Macular Research" and other initiatives. For generations to come, Wilmer will honor his name and benefit from what he did for us.

Regards,

  
**PETER J. McDONNELL, Director**

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## Looking Back

Since its founding in 1925, the Wilmer Eye Institute has cultivated more ophthalmology leaders than any other eye hospital. The Wilmer house staff of 1974–75 exemplifies this distinction, having included (front row) David Guyton, Rudolph Franklin, Daniel Finkelstein, Wilmer Director A. Edward Maumenee, Jackson Iliff and David Victor; and (back row) Jack Christiansen, Brian Conway, Neil Miller, Earl Kidwell, Nicholas Iliff, Ronald Radius, Michael Ference, Jonathan Pederson, Trexler Topping and Alfred Sommer.

Of these, Conway, Guyton, Finkelstein, Jackson Iliff, Nicholas Iliff, Kidwell, Miller and Sommer went on to faculty positions at Wilmer, distinguishing themselves through groundbreaking research, educational efforts and clinical care. Each year, a Wilmer resident is recognized for outstanding patient care with an award named for Nicholas Iliff. Guyton, Finkelstein and Miller benefited from the support of endowed professorships. Guyton, Finkelstein, Kidwell and Sommer have since had endowed professorships established in their own names, and planning is underway for an endowed professorship to honor the work and legacy of Neil Miller. The recipients of endowed professorships continue to conduct some of Wilmer's most significant research.





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