Wilmer Eye Institute

2022 ANNUAL REPORT

Wilmer

Beyond the Eye

Breaking boundaries to provide lifesaving care, inform national standards and expand the opportunities for underrepresented physicians

A DIVERSITY OF POINTS OF VIEW AND LIFE EXPERIENCES MAKES WILMER BETTER ABLE TO SERVE OUR PATIENTS — OUR MOST IMPORTANT ACTIVITY OF ALL.

As I See It...

Dear Friends,

As the world began meeting face-to-face again throughout 2022, faculty members, staff members and Wilmer supporters were able to gather together to celebrate events that hold great meaning for the institution, including the graduation of our residency class of 2022 and the dedication of three different endowed professorships.

These in-person events brought me face-to-face with the importance of what we do at Wilmer — educating the next generation of leaders, conducting transformative research that inspires generous support, and providing hope that investing in today will lead to life-changing new treatments for patients tomorrow.

In this annual report of Wilmer's activities, you will see that we took a wider view of our mission — caring for the eyes of our patients — to illustrate how our work affects those who choose to trust Wilmer with their care.

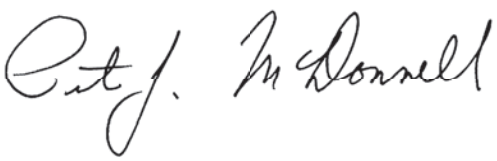
The eye, which is more easily accessible than organs shielded by skin and muscle, often reveals insights into a patient's overall state of health. Because of this, Wilmer doctors can be effective partners with other specialists in diagnostic and surgical procedures — particularly at Johns Hopkins where people often have complex conditions. In this report, you will read about two patients whose lives were saved because of Wilmer ophthalmologists' clinical acumen.

Wilmer's reach extends beyond Johns Hopkins as well. You will read about an ophthalmologist who has become the national expert setting guidelines for cancer immunotherapy treatment when adverse ocular events occur. Her work guides thousands of doctors (ophthalmologists and clinicians in other specialties) all over the country — many of whom do not work at or even near an institution with the number of experts and level of resources that Wilmer and Johns Hopkins enjoy.

Because so many Wilmer trainees go on to become leaders in the field, efforts we prioritize here have the power to shape the field of ophthalmology. One of those efforts is building a field more representative of the United States and beyond. A diversity of points of view and life experiences makes Wilmer better able to serve our patients — our most important activity of all.

As 2022 draws to a close, I would like to express my deep gratitude to our patients for allowing us to care for you; to our supporters and friends for your faith in and partnership with us; to faculty and staff members for your hard work day after day in our clinics, operating rooms and laboratories; and to our colleagues across the country for your interest in and support of the Wilmer Eye Institute.

Yours sincerely,



PETER J. McDONNELL, M.D., Director

Visible Light

Near-Infrared Light

Infrared-Ultraviolet Light

On the cover and in the feature "Beyond the Eye" (page 6) is the Helix Nebula, sometimes called the "Eye of God." At 650 light-years away, this dying star is our closest planetary nebula.

The human eye can only see visible light, but telescopes like NASA's James Webb Space Telescope help us see "beyond the eye" by capturing other wavelengths of light like infrared and infrared-ultraviolet. Located on the Johns Hopkins' Homewood campus, the Space Telescope Science Institute does the science and missions operations for Webb.

To learn more, use the QR code or visit: webbtelescope.org/contents/media/videos/1102-Video

Image credit from top to bottom: NASA, NOAO, ESA, the Hubble Helix Nebula Team, M. Meixner (STScI), and T.A. Rector (NRAO); ESO, VISTA, J. Emerson. Acknowledgment: Cambridge Astronomical Survey Unit; NASA, JPL-Caltech

The mission of the Wilmer Eye Institute, Johns Hopkins Medicine, is to transform medical outcomes in the field of ophthalmology through collaboration and innovation, resulting in compassionate, leading-edge, patient-informed care.

With an unwavering dedication to our founding vision, Wilmer offers:

- A humane approach to patient care
- A breadth of leading solutions
- A deep investment in research
- A track record of producing leaders in the field of ophthalmology

Collaborative and purpose-driven, the Wilmer Eye Institute understands the critical importance of sight, an essential part of the human condition.

Inside

HIGHLIGHTS

BRIGHT SPOTS IN 2022 FROM WILMER

WILMER
BY THE NUMBERS

#1 Wilmer Eye Institute, Columbia, was voted #1 in Eye Care in the Best of Howard County

#1

Wilmer Recognized for Excellence

***Ophthalmology Times* has ranked Wilmer #1 Best Overall Program in the nation and #1 Best Research Program in the nation for the third year in a row.** The program rankings are based on a survey of department chairs and residency directors across the U.S.

9 Clinical Locations

CARING FOR PATIENTS

406,968
Phone Calls

13,078
Same Day Appointments

268,749
Patient Visits Annually

15,254
Surgeries Annually

POWERED BY COLLABORATION

21 Scientists	**20** Residents
21 Research Associates	**32** Nurses
74 Ophthalmologists	**421** Staff Members/ Technicians
27 Optometrists	**75** Students
14 Clinical Fellows	**2** Trainees

DEDICATED TO RESEARCH

5 Core Research Centers

700+
Peer-Reviewed Papers Published in 2021

HIGHLIGHTS 2022

Sharon Solomon, M.D., the first African American to be named full professor at the Wilmer Eye Institute, was inducted into the Indispensable Role of Blacks at Johns Hopkins exhibition during a Juneteenth Celebration on June 17. The project celebrates Black students, faculty and staff who have made lasting contributions to the university.

Adrienne Scott, M.D., received a 2022 Research to Prevent Blindness/AAO Award for IRIS Registry Research. Scott will use big data to explore a possible protective effect of sickle cell trait in patients with both diabetic retinopathy and sickle cell disease.

An experimental nanoparticle treatment developed by **Kannan Rangaramanujam, Ph.D., M.S.**, reduced the risk of death and need for a ventilator in a study of patients hospitalized with COVID-19. The work was published in *Science Translational Medicine*.

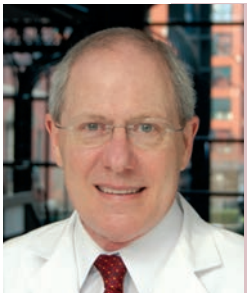
Megan Ward, M.Sc., has joined the Wilmer Eye Institute as executive director of development. She was previously at the Johns Hopkins Kimmel Cancer Center for the past 11 years and has a track record of managing meaningful relationships with faculty, in both clinical research and basic science, and grateful patients and their families.

She completed undergraduate studies at Ohio University in Athens, Ohio, and more recently completed a Master of Science in Healthcare Management at the Johns Hopkins Carey Business School.

VISION FOR BALTIMORE

After a study by **Megan Collins, M.D., M.P.H.**, and colleagues found that school-based delivery of eye care services helped students in Baltimore improve scores on math and reading assessments, other school districts, including Washington, D.C., have begun adopting models similar to the Vision for Baltimore program — including providing vision screenings, eye exams and, if needed, free glasses. The lessons learned from Collins et al.'s research have proven key to the development of new models of pediatric eye care delivery, especially for underserved communities.

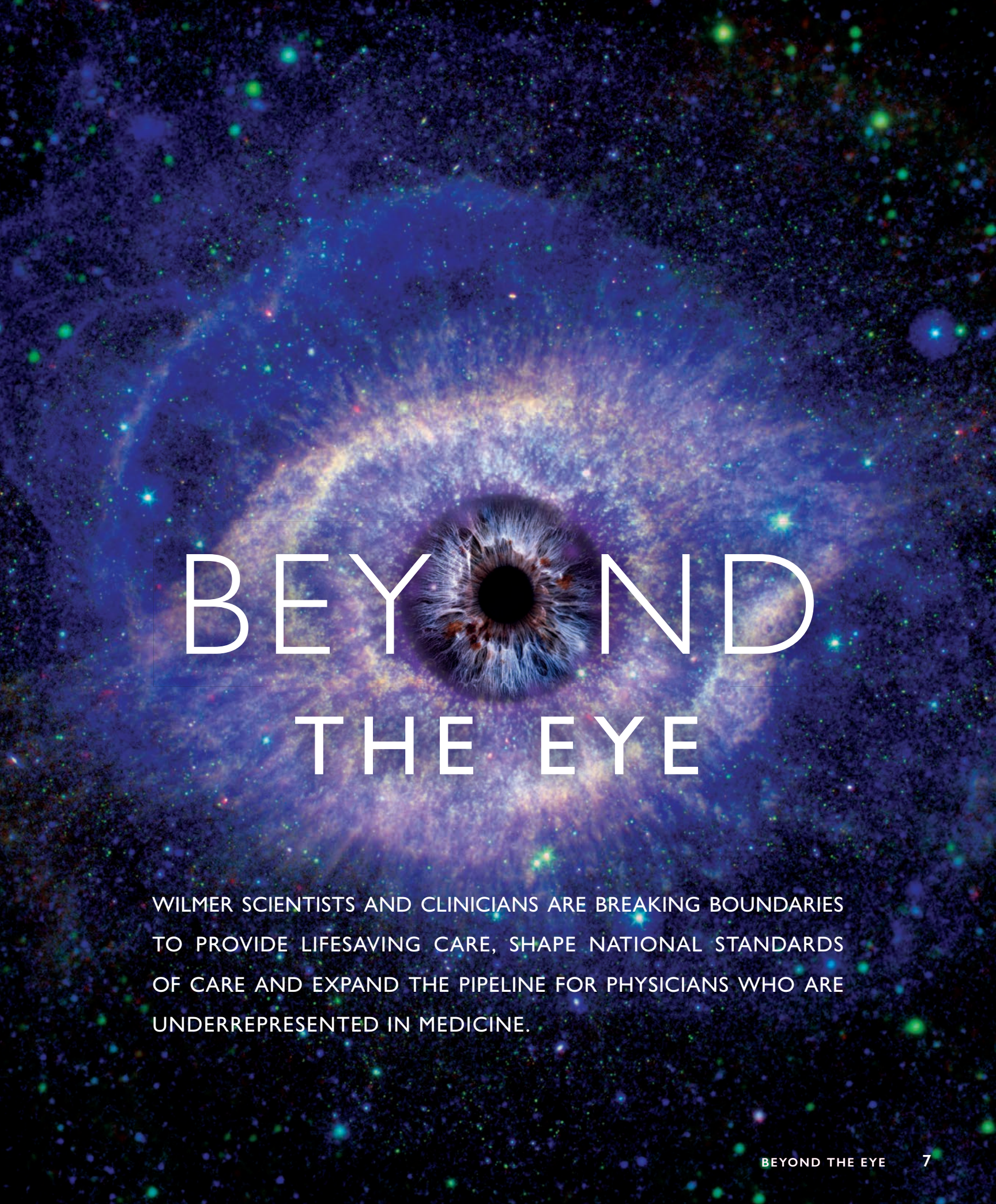
In a preliminary study of people with wet age-related macular degeneration, **Akrit Sodhi, M.D., Ph.D.**, and colleagues reported that as many as one third of patients may someday be able to safely stop eye injection therapy without further vision loss. The study was published in the *Journal of Clinical Investigation*.



Harry Quigley, M.D., was named to *The Ophthalmologist* 2022 Power List of the top 100 most influential people in ophthalmology.

Morton Goldberg, M.D., director emeritus of Wilmer, received the Laureate Recognition Award from the American Academy of Ophthalmology. The award — AAO's highest honor — is given to ophthalmologists who distinguish themselves and the profession by making exceptional scientific contributions toward preventing blindness and restoring sight worldwide.

The eye, long described as the window to the soul, might also be considered a portal to the vastness of the human experience. Through its muscles, tissues and blood vessels, doctors can discern diseases residing in other organs. Through its study, physician-scientists can collaborate to find connections between diseases and between the biology of all the cells in the body. And through the field of ophthalmology, the challenges of equity can be met with solutions. We invite you to explore the many ways Wilmer faculty members go beyond the eye.



BEYOND THE EYE

WILMER SCIENTISTS AND CLINICIANS ARE BREAKING BOUNDARIES TO PROVIDE LIFESAVING CARE, SHAPE NATIONAL STANDARDS OF CARE AND EXPAND THE PIPELINE FOR PHYSICIANS WHO ARE UNDERREPRESENTED IN MEDICINE.

When an Eye Exam Yields a Lifesaving Discovery

An eye injury led Wilmer doctors to an alarming diagnosis for Jeff Stevenson — and ultimately a path forward to saving the young man's vision and his life.

By Amy Entwisle

Jeff Stevenson was training to be a federal law enforcement officer. A couple months into the program, during a simulation exercise, a paintball hit his face shield just above his left eye. He felt pressure and a slight stinging sensation, nothing more.

The next morning, his eye was red. He wondered if he had pink eye. At the medical unit, he was told that it wasn't pink eye, but they didn't know what it was. Neither did an optometrist in town, who sent him to a corneal specialist in Albuquerque — a five-hour drive. By now, Stevenson's eye had begun to hurt.

That specialist wasn't sure what was going on either, but he advised Stevenson to go to the Wilmer Eye Institute, where he had done his fellowship training. "It's the best place in the world to go for eye care," the doctor told him.

Stevenson's eye still hurt, but even more worrisome, he had begun to lose vision in it. At Wilmer, a sonogram revealed that his eye was bleeding inside from the impact of the paintball, which would explain why it was difficult for him to see. But it also revealed something far more ominous: a large mass.

Stevenson vividly remembers the doctor saying that the sonogram showed a tumor on the retina. "As a 23-year-old kid, I was like, people get tumors under their skin all the time. I'd had a buddy from college who had a little tumor on his forearm, and they just went in and removed it, like a mole," he says. "I wasn't thinking cancer."

But the characteristics of the tumor suggested it *was* cancer. At Johns Hopkins, **James Handa, M.D.**, the Robert Bond Welch, M.D., Professor of Ophthalmology and chief of the Retina Division at Wilmer, sent Stevenson for a chest X-ray and bloodwork. The next day, he called Stevenson's home. "I was a young guy right out of college," Stevenson says. "I was living with my parents, and the doctor called my mom and said, 'Your son has cancer. We're not sure what's going on, but he has a tumor in his eye and his blood counts are way off. We recommend that you consult with an oncologist.'"

A work-up revealed that Stevenson had stage 4 testicular cancer that had spread to his eye and lungs. The good news was that testicular cancer can usually be treated successfully. "If you're going to have cancer, that's the one to have," the oncologist told him.

Three days after receiving a diagnosis of cancer, Stevenson underwent surgery to have the testicle removed. That was on a Thursday. The following Saturday, he walked across the stage for his college's annual commencement ceremony (he had graduated several months earlier). On Monday, he began chemotherapy.

He ultimately underwent several rounds of chemotherapy, spending six hours a day, five days a month at the hospital each round. He also had weekly appointments with Handa. In consultation with Stevenson's oncologist, Handa was monitoring the size of the eye tumor; if the chemotherapy didn't work, they would implant a radioactive disc to kill the tumor. Fortunately, that turned out to be unnecessary. The chemotherapy shrank all the tumors, including those in his lungs.

Left: Jeff Stevenson and his family

Below: James Handa performs an eye exam on Jeff Stevenson

Previously, the focus had been on saving Stevenson's life. Now, the Wilmer team could work on restoring vision to his eye, which he had ultimately lost as a result of bleeding from the initial injury. Handa operated, removing the accumulated blood and a pucker in the macula caused by the bleeding. Two more surgeries followed, including one to remove a developing cataract.

Today, Stevenson credits the care he received at Wilmer with having near-perfect vision. "The kindness and the attention to the patients at Wilmer is second to none," he says. "Everyone was so wonderful and helpful. I feel like I couldn't have gotten better care."

Stevenson completed his training and is now a federal law enforcement officer. He has since married, and he and his wife have a baby girl. He thinks back on that time and shakes his head. "I was scared because of what was going on with my eye, but then to be told you have cancer...."

Handa says that Stevenson and his family showed tremendous courage during a very challenging time. "Taking care of him has been easy and a joy. I am so glad that he is thriving," says Handa.

After Stevenson recovered, his younger brother was diagnosed with early-stage testicular cancer — early, because of his awareness of his brother's ordeal. "When he felt a lump, he was like, 'Hey, that's what my brother went through,'" says Stevenson. "He went and got checked out and thankfully, he didn't have to go through all the stuff I did." ✦

Bill Roeting and Sezen Karakus

‘Like a Miracle’

Bill Roeting’s head pain took him on a long and arduous journey — ultimately landing him at Wilmer, where a team of our doctors found the solution to his life-threatening medical mystery.

By Emily Gaines Buchler

When pain spread across Bill Roeting’s right eyebrow and into his eyelid, his primary care doctor initially thought he had shingles. But the pain grew progressively worse for the 73-year-old resident of Fairfax City, Virginia, forcing Roeting to embark on a long and arduous search for answers.

That journey took him to multiple academic medical centers, where neurosurgeons and other specialists diagnosed him with everything from trigeminal neuralgia to cluster headaches and even “ghost pain.” Among the many treatments and

surgical procedures he received, nothing worked. "One procedure was supposed to relieve pain for two years, but it didn't even relieve pain for two minutes," Roeting recalls.

With his pain intensifying, Roeting had to cut back his work as the director of the Rapid Prototyping Research Center in the College of Engineering and Computing at George Mason University, where he researched and developed innovative technologies for the military in a late-life career following decades of work as a researcher and naval aviator.

In conjunction with the pain, Roeting developed what he interpreted as a severe case of dry eye, for which he began seeing **Sezen Karakus, M.D.**, an ophthalmologist specializing in cornea and external eye diseases at the Wilmer Eye Institute. Karakus diagnosed Roeting with atypical, early-stage neurotrophic keratitis, a degenerative disease of the cornea that can develop as a result of damage to the trigeminal nerve.

"I told Mr. Roeting this was the beginning of a long journey together," Karakus says, explaining that neurotrophic keratitis is a chronic condition that takes ongoing treatment to manage. But Karakus sensed that something else was causing her patient's excruciating pain and urged him to keep seeing specialists to determine a root cause.

At a medical center across the country, neurologists reviewed Roeting's case and "didn't even think my pain was real," Roeting says. "They diagnosed me with ghost pain and wanted to insert some kind of electro-transmitter in my body to trick my brain into not feeling pain." Roeting considered traveling for the procedure, when something unexpected happened: He started to lose sight in his right eye.

"I messaged Dr. Karakus, telling her, 'I'm losing my vision!'" Roeting shares. "She got me in to see her immediately and, ultimately, saved my life."

In the clinic, Karakus saw that vision in Roeting's right eye had decreased from 20/25 to 20/40 — not an alarming drop, but one that corneal disease alone could not explain. Karakus conducted an extensive examination that included checking the visual field and taking cross-sectional images of the optic nerves and retina.

"Only the visual field testing turned up an abnormality," Karakus says. "The results weren't specific, but I noticed reduced sensitivity and a visual field defect, suggesting a blind spot in the line of sight."

Karakus picked up the phone, calling the Division of Neuro-Ophthalmology at Wilmer to arrange for **Drew Carey, M.D.**, a neuro-ophthalmologist, to see Roeting that same day. After an extensive review of Roeting's medical records and images, Carey and his team identified something significant: Roeting had a lesion behind his right eye and a scar on his forehead, from where skin cancer had been removed some 20 years earlier.

Left to right: Drew Carey, Sezen Karakus and Nicholas Mahoney

The lesion and scar provided the clues they needed to make a probable, yet unnerving, diagnosis: orbital cancer.

"Cancer can unfortunately travel along tissues that coat sensory nerves in that area and use them as a roadway, carrying cancer back into the eye orbit and even the brain," Carey explains. Piecing together knowledge of Roeting's skin cancer "with the fact that his optic nerve, trigeminal nerve and sixth nerve were all impaired, we knew there was really only one explanation: a tumor in the orbital apex."

"Nobody had identified the tumor on the MRI, but on the images, we could see a thickening in the area of the orbital apex, at the back of the eye socket, representative of what could be a tumor," he says. To know for certain, Roeting would need to have the tumor biopsied, a complicated procedure, given the location of the tumor deep in the eye's orbit, where nerves and bloods vessels cross paths.

"It's really delicate back there," says **Nicholas Mahoney, M.D.**, chief of the Oculoplastics Division at Wilmer, who partnered with **Jon Weingart, M.D.**, a neurosurgeon at Johns Hopkins Medicine, to perform the biopsy.

The team's theory turned out right: Roeting's earlier skin cancer, squamous cell carcinoma, had traveled along his nerve to his eye socket. But treating the cancer wouldn't happen easily.

"Traditionally, these cancers are hard to treat because they can't be cut out and don't respond well to chemotherapy," Carey explains. "High-dose radiation could work but can cause permanent nerve damage and blindness."

Fortunately, Roeting was a candidate for immunotherapy, a newer treatment that triggers the body's immune system to fight the cancer. Within a week of his surgery, Roeting started receiving immunotherapy from Evan Lipson, M.D., an oncologist at the Johns Hopkins Kimmel Cancer Center. He continued receiving treatments for close to a year, while working with the Johns Hopkins Palliative Medicine Program to manage the pain.

"Immunotherapy was like a miracle," Roeting says. "All of a sudden, my eyesight came back, and my pain was reduced significantly."

"No one will tell me my cancer is gone, but they tell me it's stable, which means 'in remission,'" Roeting says. "And I have this amazing team at Wilmer and Hopkins to thank for, well, my life." ✦

A National Resource

Meghan Berkenstock is leading efforts to establish standards of care for oncology patients experiencing ophthalmological side effects from immunotherapy.

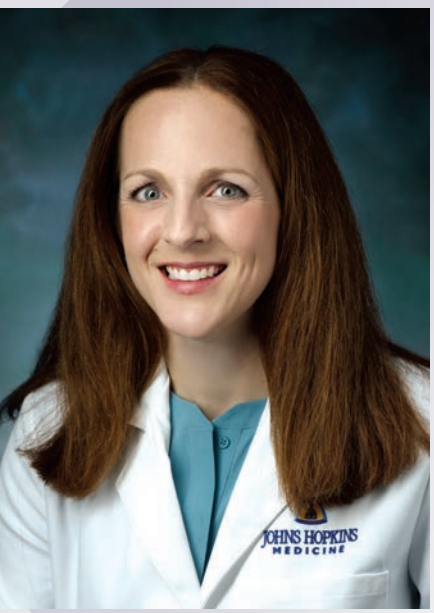
By Jessica Wilson

Meghan Berkenstock, M.D., an associate professor of ophthalmology and subspecialist in ocular immunology, handles a range of conditions, from cataracts to uveitis. Within the past several years, however, she has turned her focus to treating the ocular side effects of immune checkpoint inhibitors — the game changers in cancer treatment referred to as immunotherapy.

In so doing, she has become a national resource for oncologists across the country.

The opportunity to specialize in this area of medicine was not something she planned, primarily because, "These drugs weren't out when I was in medical school. They're new kids on the block," says Berkenstock. Today, however, she has embraced this complex challenge that involves deep collaboration throughout Johns Hopkins Medicine.

Meghan Berkenstock



"Patients derive a great deal of benefit from having their doctors talk to each other and work together to take care of them as whole people." – LAURA CAPPELLI

Berkenstock began developing her expertise when she joined the multidisciplinary immune-related toxicity (IR-tox) team at Johns Hopkins Medicine, created by **Laura Cappelli, M.D., M.H.S.**, a rheumatologist and assistant professor of medicine, and **Jarushka Naidoo, M.B.B.Ch.**, now a thoracic oncologist at the Beaumont RCSI Cancer Centre in Dublin, Ireland, and adjunct professor of oncology at the Johns Hopkins Kimmel Cancer Center.

Cappelli and Naidoo launched the IR-tox team in 2017 because an increasing variety of immune checkpoint inhibitors were being approved for different tumor types and indications — which meant an increasing number of oncologists were prescribing this class of drugs in greater numbers and encountering a wide array of side effects in patients.

"These drugs do not have the same side effects as chemotherapy. These different side effects are immune-mediated, and they require specialty consultation," says Cappelli. "We decided to form this immune-related toxicity team where we would connect the oncologist with the interested subspecialists to see their patients and help manage these cases," says Cappelli.

The IR-tox team at Hopkins is one of the first organized multidisciplinary programs created to address the unique needs of patients taking immunotherapy medications. "Patients derive a great deal of benefit from having their doctors talk to each other and work together to take care of them as whole people. With the tox team, having complementary expertise at the same institution, and physicians who are committed to working together, really helps the patients get improved specialty care and streamlined care," says Cappelli.

When Berkenstock became part of the IR-tox team, she was a new faculty member at Wilmer in the process of building her practice. Soon her schedule included seeing several patients a week with ocular side effects of immunotherapy.

"For the most common immune checkpoint inhibitor, 1% of patients have ocular side effects," she says. "About 40% of those patients get dry eye, which is treatable. Uveitis is the second most common side effect, which can be dealt with using topical or intraocular steroids, sometimes oral steroids. Rare side effects would be problems with the orbit or even optic neuritis. So, it requires a lot of coordination with the oncologist and the general medical team."

With an increasing number of new immunotherapy medications going through clinical trials and getting approved, more — and different — side effects can develop. It requires

constant effort to keep up with the different treatments becoming available, says Berkenstock, but she finds inspiration from her patients.

"Sometimes I get a message from a local provider or an out-of-state provider that says, 'I have never seen this before. I need your help.' And then the patient gets here and I can say, 'I saw this twice this last week. We can definitely help you.' And the patient says, 'Oh my God, you've seen somebody else like me,'" says Berkenstock. "The relief comes in multiple levels and in different ways."

There are times, though, when the side effects outweigh the benefits of a treatment. And those managing the care of patients on immunotherapy medications must consult specialists regarding the decision to stop or continue treatment. However, not all doctors work in an institution populated with an array of specialists. That is where the National Comprehensive Cancer Network (NCCN) comes in.

The NCCN is an alliance of 32 cancer centers in the U.S. that creates clinical practice guidelines regarded to be the standard in oncology. The NCCN's guidelines are developed and updated by 61 individual panels, comprising over 1,700 clinicians and oncology researchers from the 32 NCCN Member Institutions.

Because of Berkenstock's experience treating so many patients with ocular side effects of immunotherapy drugs, she was asked to serve as the ophthalmologist on the NCCN's immune-related adverse events of immunotherapy board. This entity includes one or two representatives of each medical specialty — from ophthalmology to rheumatology to urology — who set recommendations for when doctors should continue an immunotherapy treatment or cease treatment because of a patient's side effects.

"I'm the ophthalmologist in charge of making recommendations that anybody in the United States who types in [a search bar] 'National Comprehensive Cancer Network practice guidelines' will see," says Berkenstock.

She cites the example of a hypothetical doctor with a patient who has uveitis. Based on various factors, the guidelines might conclude that the risk of blindness outweighs the benefit of the particular immunotherapy drug and the recommendation is to cease the therapy. Guidelines such as this are of paramount importance to doctors practicing in places without easy access to specialists such as ophthalmologists to whom they can refer patients right away.

"It's a heavy responsibility and it requires a lot of time effort, but a lot of love as well," says Berkenstock. "We doctor to help people," she says. "It's gratifying not only personally but professionally to know that I'm trying to find the best way to treat people not only at Wilmer, but also across the country." ✦

Shaking Up the Status Quo

Expanding the ophthalmology pipeline for those who are underrepresented in medicine is critical, say Wilmer faculty and trainees, who are focused on doing just that.

By Amy Entwisle

Above: From left to right, Wilmer residents Anuoluwapo Sopeyin, Leangelo Hall and Elise Mike with Wilmer residency program director Fasika Woreta

As with most medical specialties, ophthalmology suffers from a lack of diversity. While underrepresented minority groups comprise over 30% of the population in the United States, physicians who are underrepresented in medicine (URM) make up only 6% of practicing ophthalmologists. Research shows this lack of diversity can contribute to health disparities and affect patient outcomes, notes **Fasika Woreta, M.D., M.P.H.**, the Eugene de Juan, M.D. Professor of Ophthalmic Education at Wilmer.

Sharon Solomon, M.D., the Katharine M. Graham Professor of Ophthalmology and the first African American promoted to full professor at Wilmer, agrees. "For some patients, their level of trust, confidence and adherence to medical recommendations are clearly bolstered by interacting with a physician with whom they identify," Solomon says.

Woreta, director of Wilmer's residency program and a graduate of its class of 2011, says efforts to increase the number of URM trainees entering

ophthalmology must start with creating opportunities for exposure to the field.

Now in its fourth year, Wilmer's Diversity Scholars Program exposes rising second-year URM medical students to ophthalmology and provides them with opportunities for mentored research, which often focuses on issues of underrepresentation in medicine. Last year, Woreta mentored medical student Ugochi Aguwa. Together, they published an editorial in the *American Journal of Ophthalmology* calling for greater racial diversity in the ophthalmology workforce. Aguwa also produced a paper with Wilmer's vice chair of education, **Divya Srikumaran, M.D.**, on barriers to residency program diversity recruitment. That paper — which advised creating diversity education resource toolkits that could be shared to provide programs with needed support — was published in the *Journal of Surgical Education*.

Below: Wilmer Diversity Scholars Class of 2022 Left to right, Amanda Martinez, Kailyn Ramiriez, Dimitri Johnson, Temi Adeleke and Rebecca Mirville

In addition, Aguwa shadowed Solomon, a retina specialist who, noting Aguwa's record of publication and interest in ophthalmology, invited her to serve on a committee she co-chairs as part of an American Academy of Ophthalmology (AAO) task force on disparities in eye care. Solomon also recruited **Ann Margret Ervin, Ph.D., M.P.H.**, a young epidemiologist at the Johns Hopkins Bloomberg School of Public Health, to serve.

"Dr. Ervin and student-doctor Aguwa are incredibly talented and accomplished women of African descent," Solomon says, noting that their expertise, fresh perspectives and steadfast work ethic benefit the committee's efforts. Solomon also saw the move as an opportunity to support the women. "I hoped to put on the academy's radar two incredibly talented colleagues, one in the early part of her academic career and the other about to apply for training in ophthalmology," Solomon says. "I recognized existing talent and offered it a chance to thrive. That is how one increases diversity in the ranks."

Woreta says programs such as Diversity Scholars are especially important since some medical schools, including most historically Black ones, lack home ophthalmology programs. She points out that students without exposure to ophthalmology are less likely to choose the profession, and if they do, they face barriers to finding mentors in the absence of a home ophthalmology program.

In fact, URM students entering ophthalmology may not have encountered a single URM role model in the field. **Leangelo Hall, M.D.**, was attending the National Medical Association annual meeting's ophthalmology section when he heard a talk by **Adrienne Scott, M.D.**, associate professor of ophthalmology and co-chair of Wilmer's Diversity Council. "It was really inspiring to see somebody that looks like me," Hall says. "Just to see somebody that was a Black ophthalmologist, and successful and smart and kind, were all things that were new to me."

Hall, who hails from Miami and attended Harvard University, was considering staying in Boston or going to Miami for his residency, but after talking with Scott about Wilmer's diversity efforts, he took a closer look at its program, where he is now a fourth-year resident.

Adrienne Scott and Leangelo Hall

As a medical student at Yale University, **Anuoluwapo Sopeyin, M.D.**, who is from Nigeria, found an accepting and diverse culture, but as a research assistant in New York City, she was the only Black person in the laboratory. "Some of my colleagues couldn't understand the challenges I faced being a woman of color and navigating the academic landscape," says Sopeyin, adding that the experience helped her appreciate what it means to value diversity in academia and science and to have programs in which people from diverse backgrounds are encouraged and mentored. Today, she too is a Wilmer resident.

Additional efforts to expose URM medical students to the field are underway through programs offered by AAO, the Association of University Professors of Ophthalmology (AUPO) and Johns Hopkins Medicine.

Wilmer faculty have mentored students through the Minority Ophthalmology Mentoring (MOM) program, a partnership between AAO and AUPO. The program assigns mentors to URM college students through the second year of medical school, who guide them through the process of becoming an ophthalmologist. A member of the MOM metrics subcommittee, Woreta says it's exciting to see that programs such as MOM and the Rabb-Venable Program are making a difference. (The Rabb-Venable Excellence in Ophthalmology Program

Ugochi Aguwa and Sharon Solomon

supports medical students, residents and fellows in ophthalmology who are underrepresented in medicine or who desire to work in underserved communities.)

Woreta also co-chairs an AAO subcommittee on diversity and inclusion education that provides resources for program directors, including a toolkit to raise awareness of factors that lead to underrepresentation in ophthalmology, such as unconscious bias and lack of mentorship.

In addition, she serves on a graduate medical education (GME) diversity recruitment subcommittee with other program directors from Johns Hopkins Medicine. "Some of our residency programs are doing well with regard to diversity in recruitment, whereas others have room for improvement. We share ideas and best practices that we can implement in our own programs," she says.

BEYOND THE EYE

The Johns Hopkins GME office organizes a virtual elective in equitable health care for visiting fourth-year medical students, who study specialty-specific content and attend group sessions on achieving health equity. **Elise Mike, M.D., Ph.D.**, took the elective, which included interactive lectures by Wilmer faculty. "Although many programs highlight diversity as a feature, Wilmer was one of the few that demonstrated representation of those systematically excluded and marginalized among residents and faculty," she says.

Mike subsequently published a commentary in *JAMA Ophthalmology* about the need for more direct action to increase the number of minority ophthalmology residents nationwide. She also worked with two residents to create an interactive lecture series called "Normalizing Antiracism in Ophthalmology." The trio led sessions at several academic medical centers, including Wilmer, where Mike is a second-year resident. Plans for additional sessions are in the works.

Woreta is grateful for the support provided by the Eugene de Juan, M.D. Professorship in Ophthalmic Education, including the gift of time to focus on teaching and research. "That they dedicated the professorship to the residency program director in the name of education is unique to Wilmer and reflects Wilmer's history of teaching and mentorship," she says. ✦

By Jennifer Walker

Solving the Mystery of Thyroid Eye Disease

As the new Odd Fellows Rising Professor of Ophthalmology, Fatemeh Rajaii will get a big boost in her research pursuit.

Long-lasting institutions remain relevant by honoring their past while keeping their eye on the future. The Independent Order of Odd Fellows exemplifies this strategy. The fraternal order, formed in the 18th century in England, established its first American Odd Fellows lodge in Baltimore, Maryland, in 1819. Several centuries later, the Odd Fellows comprises 600,000 members in 30 countries and attracts members by offering a place to "take an active role in helping your community and the world be a better place."

Fatemeh Rajaii in her lab

One way the order does so is through philanthropy. Since 1963, the Odd Fellows has supported the Wilmer Eye Institute through its Visual Research Foundation, and the organization has provided funding for three professors since then, including the current Odd Fellows Professor of Ophthalmology, **Henry Jampel, M.D., M.H.S.**

Building on the history of its relationship with Wilmer, the Odd Fellows recently endowed a rising professorship. Wilmer created rising professorships in 2021 to provide up to seven years of research funding and support to promising early-career faculty members. The inaugural group of endowed Rising Professors consists of four assistant professors of ophthalmology — including the new Odd Fellows Rising Professor of Ophthalmology **Fatemeh Rajaii, M.D., Ph.D.**, an oculoplastic surgeon and clinician scientist.

"The reason we support a rising professorship is for the future," says Mark Ulrich, chairman of the Odd Fellows Visual Research Foundation. "Through mentoring from Dr. Jampel and funding from the professorship, the goal is to help accelerate Dr. Rajaii's research and clinical practices so hopefully in the future we can find a cure for some of the diseases that affect the eye."

"Given challenges in funding for early career scientists, it is more crucial than ever today to provide support for our most promising early-career clinician scientists. With this latest Rising Professorship, the Order of Odd Fellows has further solidified the Wilmer Eye Institute as the place where young scientists can flourish in their work," says Wilmer Director **Peter J. McDonnell, M.D.**

"The reason we support a rising professorship is for the future."

— MARK ULRICH, CHAIRMAN OF THE ODD FELLOWS VISUAL RESEARCH FOUNDATION

Rajaii's work focuses on better understanding thyroid eye disease (TED), which is associated with autoimmune thyroid disease. Thyroid eye disease occurs when antibodies in the immune system that normally help the body fight infection mistakenly trigger a receptor on cells in the bony eye socket, or orbit. This sets off inflammation and an abnormal reaction in which the fatty tissues and muscles behind the eye expand.

"There's really no place to put the extra tissue, so this can cause the eye to bulge or crush the optic nerve," Rajaii says. Patients may also experience strabismus, or crossed eyes, which can lead to double vision, and, in rare cases, blindness.

Rajaii is intent on answering a basic science question: How do orbital fibroblasts, the target cells in the pathology of thyroid eye disease, differentiate to become new fat cells, which causes the expansion of the tissues behind the eye? "Despite all we know about thyroid eye disease, there are still many questions regarding the disease process, so the ultimate goal of my research is to learn more," she says. Once the mechanics of the disease are better understood, then pathways and molecules could be targeted to develop novel therapies, she adds. This important line of research will now be possible for her to pursue, thanks to the Order of Odd Fellows.

For Rajaii, the key benefit of a rising professorship is the seven years of research funding. Like other early-career faculty, she has received a Career Development (K) Award to get her research off the ground. She will next apply for a Research Project (R01) grant. But nationwide, it takes an average of eight years for new faculty members to receive their first R01 grant, which could leave a funding gap of several years.

"The length of time of the rising professorships provides a cushion," says Rajaii, who was drawn to ophthalmology because she felt the specialty would allow her to balance both clinical work and research. "The rising professorship will provide extra funding and time to maintain lab productivity and transition to the next step."

When it comes to her Odd Fellows Rising Professorship, Rajaii is especially thankful to have funding to hire another staff member. In addition to her work examining thyroid eye disease, she has

Standing, from left: Sovereign Grand Treasurer Harrell Ward Jr., Sovereign Grand Secretary Terry Barrett, I.A.R.A. President Kathleen Richen and Sovereign Grand Master Charles Lusk

Seated, from left: Chairman of the Foundation Mark Ulrich and Fatemeh Rajaii

a second area of research working with **Jonathan Ling, Ph.D.**, from pathology, and **William Brian Dalton, M.D., Ph.D.**, from oncology, both faculty members at the Johns Hopkins School of Medicine. Together they are working to harness abnormalities in splicing — the process in which genes are converted into proteins — that occur within tumor cells to selectively target those tumor cells for treatment or cell death. Having another person in her lab is crucial to advancing these multiple lines of research.

"I still have clinical responsibilities so it's hard to maintain the highest productivity with research when I'm not able to be there all the time," she says. This additional person ensures research continues even as Rajaii attends to her other responsibilities. "It's an amazing thought that the Odd Fellows had, to support this program." ●

A RELATIONSHIP THAT GOES WAY BACK

Historians believe that philanthropist Johns Hopkins, the university's namesake, may have had a business relationship with Odd Fellows founder [in the U.S.] Thomas Wildey. In the 1800s, Wildey, a spring-maker, was supplying the springs for the wagons that Hopkins produced through his freight company. This history may have played a role in the Odd Fellows developing a relationship with the Wilmer Eye Institute more than a century later, in the 1960s.

Elizabeth DuPont Spencer and Nicholas Mahoney

A Patient's Transformative Treatment for Thyroid Eye Disease

New medication is a game changer for patients like Elizabeth Spencer.

By Jennifer Walker

Elizabeth DuPont Spencer is a cognitive behavioral therapist, and her eyes are a vital tool during her therapy sessions. "My face is very important to my work because I'm communicating emotions. I need to be able to reflect what I'm hearing from my clients," says Spencer, who specializes in anxiety and obsessive-compulsive disorders and has been in practice in Rockville, Maryland, for 30 years.

So, a decade ago, when Spencer began to experience disturbing symptoms in both eyes, it affected not only her quality of life but also her work. Her eyes watered constantly, making it appear like she was tearing up, and they began to bulge, so she didn't look like herself. She also had double vision, which meant she couldn't focus on both her clients and her notes at the same time.

"It had a tremendous impact on me," she says.

For about five years, Spencer was treated by an ophthalmologist who said that the watering in her eyes was a normal part of aging. This ophthalmologist diagnosed her with thyroid eye disease (TED) after she developed double vision, but he said there was no treatment for the disease other than prescribing prisms for both lenses in her glasses to help correct her vision. But because these symptoms were getting worse, Spencer's mother recommended

she visit the Wilmer Eye Institute for a second opinion. In 2017, Spencer met **Nicholas Mahoney, M.D.**, chief of the Oculoplastics Division and an associate professor of ophthalmology, and **Courtney Lynn Kraus, M.D.**, assistant professor of ophthalmology, who have provided her care for the last five years.

Now largely on the other side of her treatment for thyroid eye disease, which included taking a brand-new medication that alleviated the worst of her symptoms, she says, "I want other people to be encouraged that they can get better from this."

Thyroid eye disease is an autoimmune disorder in which some antibodies that normally help the body identify and fight infection mistakenly attack a receptor in the eye socket, or orbit. The resulting reaction can cause the fatty tissues or muscles in the socket to enlarge, which can make the eyes bulge or cross and lead to disfigurement and/or double vision.

"We know that many patients have a worsening of this inflammatory phase in their eye socket for a period of one to two years," Mahoney says. "Once we see that a patient has made it through the worst of the disease progression, then we can correct what's left behind with surgery."

But in March 2020, a new medication called Tepezza came on the market that had also been shown to address some of these symptoms. Tepezza is administered through infusion in eight doses given three weeks apart. After the first two infusions, Spencer saw a profound difference in her symptoms. "My eyes weren't pushed forward in my head, they weren't crying any longer, and I didn't have double vision anymore," she says. "The change was unbelievable."

Mahoney notes that about 70% of patients see a durable improvement in symptoms after taking Tepezza. "We've never had a medicine that's been able to do that in the past," he says. Many of these patients will still need surgery, which is performed in three stages. But using the medication as part of a treatment plan

> "The medicine does half the job, so we don't need to take as much risk during surgery."
>
> — NICHOLAS MAHONEY

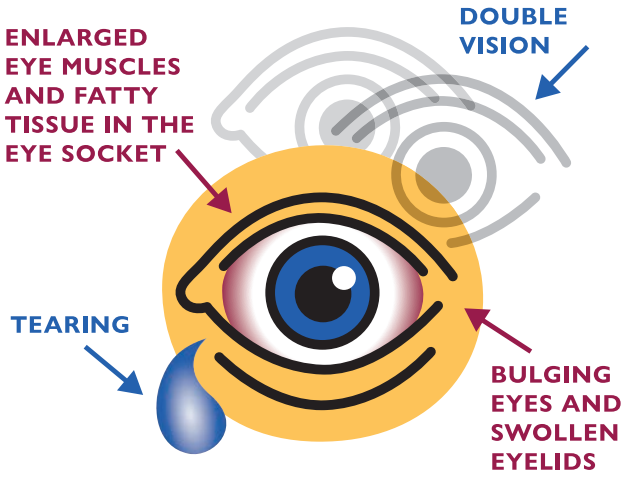
beforehand can reduce the amount of work needed at each stage.

For example, during decompression surgery, the first and most complex stage, Mahoney works to remove parts of the bony walls of the eye socket to make space for the enlarged fatty tissues and muscles and to reduce the bulging of the eyes. There are three walls that Mahoney can operate on, and working on more walls leads to a greater reduction in bulging. However, this also increases the risk of complications. Patients who have taken the medication first could have already achieved some reduction in bulging, which could mean Mahoney only has to work on one of the bones within the walls and can pick the safer place to operate.

"The medicine does half the job, so we don't need to take as much risk during surgery," he says.

Today, Spencer has only grateful words for Mahoney, Kraus and the team at Wilmer. "From the beginning, they were so lovely to me and knowledgeable," she says. "I'm not sure I could say enough good things about any of them." ●

HEALTHY EYE



THYROID EYE DISEASE
ACUTE PHASE

Better Support for Those with Partial Vision Loss

New funding will allow Gislin Dagnelie and his team to help patients better compensate for visual field loss that can accompany stroke.

By Emily Gaines Buchler

Opposite page: Gislin Dagnelie and Arathy Kartha discuss the Street Crossing test for patients with ultra-low vision, part of the Wilmer VR assessment.

Every 40 seconds, someone in the United States experiences a stroke, according to the U.S. Centers for Disease Control and Prevention. A vast majority of strokes (some 87%) are ischemic, meaning they block blood flow to the brain. When an ischemic stroke occurs in the brain's occipital lobe, which processes visual information, this can result in vision loss in part of the visual field. In the most severe cases, patients suffer from homonymous hemianopia (HH), in which the same half of the visual field is totally lost in both eyes, while the other half is maintained.

Gislin Dagnelie, Ph.D., a professor of ophthalmology and the associate director of the Lions Vision Research and Rehabilitation Center at the Wilmer Eye Institute, learned from his colleagues in the Low Vision Clinic that much remains unknown about how patients deal with HH, and that outcomes vary widely. This past summer, he received a grant from Research to Prevent Blindness (RPB) and the Lions Clubs International Foundation (LCIF) — two organizations that have provided decades-long support to Wilmer — to investigate why some people with HH can develop ways to adapt to their vision loss by using effective scanning strategies, while others suffer long-term, disabling consequences. With scanning, individuals willfully direct their gaze into the blind side of the visual field to detect things they can't see by looking straight ahead. But not everyone with HH learns to scan effectively.

Limitations caused by HH can be severe, Dagnelie explains, resulting in a patient's inability to see, for example, items on the right side of a room or the entire left side of a loved one's face. Difficulties with reading and scanning the visual environment typically ensue and can cause people to experience collisions with people or objects, drastically affecting an individual's personal and professional life.

"HH presents a form of low vision that is tricky to pin down," Dagnelie says. "When patients have macular degeneration or glaucoma, low vision

specialists often prescribe magnifiers and other devices to help with blurry vision, but with HH, the missing visual field cannot be restored, and helping the patient compensate for the defect is often by trial and error, involving occupational therapy (OT) to train individuals in techniques like scanning." The outcomes, he says, are inconsistent. Some patients learn to compensate largely on their own or with minimal help from a therapist, and others spend significant time in OT, only to keep struggling.

Since HH occurs instantaneously with an occipital stroke, Dagnelie and his team, including Liancheng Yang, the senior system manager, Chris Bradley, Ph.D., a research associate, and Arathy Kartha, Ph.D., a postdoctoral fellow, hope to recruit participants to the RPB- and LCIF-funded study as soon as possible after they experience a stroke. To help with recruitment, his team will use Epic, the electronic medical records system at Johns Hopkins Medicine and the Wilmer Eye Institute.

"We've created a way for certain diagnoses and keywords entered in Epic to trigger an alert to the doctor about this research," Dagnelie explains. For instance, when a neurologist or neuro-ophthalmologist enters a diagnosis of HH in a patient's record, a flag will pop up in real time alerting the clinician, who can then tell the patient about the research opportunity.

Only a dozen or so participants will take part in this first phase of the study because, as Dagnelie says, "we need to look carefully at what happens in a few patients, so we know what changes to look for in a larger number." That larger number, in the second part of the study, will be about 100 subjects.

Participants will wear a video headset designed specifically for Dagnelie and his team's investigation. The headset will display a video with various stimuli and scenes, which participants will attempt to look at and identify when prompted. Meanwhile, a tracker within the headset will document each participant's eye movements, allowing Dagnelie and

"There is a lot of variability in how people look at the world, and we want to find out: What is the natural way people respond to HH (homonymous hemianopia)?"

— GISLIN DAGNELIE

From left to right: Roksana Sadeghi, Gislin Dagnelie, Liancheng Yang and Arathy Kartha

his team to quantify and analyze how individuals with HH use their eyes and, for example, how long it takes to notice new stimuli. Using the eye tracker also enables the team to establish a control group, given that some people with normal vision will be recruited, and their vision will be artificially restricted by blanking out everything to the right or left of where they look. This way, the team can study how a person responds to the experience of sudden HH, without the added anxiety of having just suffered a stroke.

"Our hunch is that an individual's response to HH, and whether they can compensate, depends in large part on their eye movements," Dagnelie shares. "There is a lot of variability in how people look at the world, and we want to find out: What is the natural way people respond to HH? How do their eyes move and respond to the environment, and how does that contribute to how they adapt?"

The study's second phase will look at therapeutic approaches to HH, based on lessons learned in the earlier phase about eye movement, with a goal of creating more nuanced and specific treatment guidelines for a broad range of patients.

"Therapy right now is hit and miss," Dagnelie says. "We hope our work will lead to a more systematic approach to HH, so that when patients come in, the clinician can measure eye movement with the headset and use that information to determine what type of therapy may be most effective to help them overcome their problems. Receiving this grant from RPB and LCIF has been a game changer for our research." ●

From left to right: Akrit Sodhi, Pradeep Ramulu and Yassine Daoud

Patients as Partners

A team approach helped address ‘a perfect storm’ of problems for Howard Freedman, who was inspired to create a new fellowship aimed at embracing complexity in treatment.

By Jennifer Walker

In October 2018, Howard Freedman's vision in his left eye suddenly became very blurry, to the point that he couldn't see out of it. Freedman and his wife, Randy, were on vacation in Shanghai, China, at the time. After seeing an ophthalmologist there and in Hong Kong, and communicating with Freedman's ophthalmologist at home in York, Pennsylvania, they learned that Freedman had a dislocated intraocular lens. His artificial lens — a lens that was implanted when he had cataract surgery 15 years prior — had fallen to the back of his eye, causing the fogginess and sudden loss of vision.

After returning home, Freedman's ophthalmologist recommended he see **Yassine Daoud, M.D.**, chief of ophthalmology at Johns Hopkins Medicine — Howard County General Hospital and an associate professor of ophthalmology at the Wilmer Eye Institute.

At Wilmer, the Freedmans quickly felt at ease with Daoud. "We would talk for an hour about our families and travel, so we developed this camaraderie," says Freedman, whose career in retail leadership included serving as president of the Pfaltzgraff Retail Division and vice president of merchandising for Ollie's Bargain Outlet. "I felt comfortable that he knew who I was and that he understood my eye."

This was important because Freedman has had many issues with his left eye, which, along with cataracts and the dislocated intraocular lens, have included a history of retinal detachment and corneal disease.

"He came in with a perfect storm of many complex problems," says Daoud, adding that Freedman also had been diagnosed with pseudoexfoliation, a condition in which tiny clumps of protein fibers build up in the eye. This clogs the eye's drainage system, increases pressure, can potentially lead to glaucoma, and makes it more complex to perform surgery on the eyes.

As part of Freedman's care, in December 2018, Daoud first addressed the intraocular lens. Daoud explains that the lens sits in a box-like capsule and is connected to the wall of the eye by about 10,000 hanging, stretchy beams called zonules. "If the zonules become weak or damaged, then the lens may move out of place or drop to the back of the eye," he says. During surgery, Daoud exchanged the lens and created a new support mechanism for it, with haptics, or flexible extensions, to anchor the lens to the sclera, the white part of the eye.

Randy and Howard Freedman

Adam Chandler Photography

Then nearly a year later, Freedman needed a partial corneal transplant, a procedure in which the damaged part of the cornea is replaced with healthy corneal tissue from a deceased donor. In a normal eye, the front and the back of the eye are separated by the natural lens, which sits behind the iris, and the zonules. However, in Freedman's eye, where his artificial lens is anchored to the sclera, the natural lens and zonules are gone, meaning that his eye lacked this separation. This complicated the matter of which type of corneal transplant surgery would be most effective.

Still, Daoud, who has performed thousands of complex cataract and cornea surgeries, felt comfortable moving forward. "Mr. Freedman's transplant took within the first week or two and then he started seeing better and better," he says.

Today, Freedman sees two other specialists at Wilmer in addition to Daoud: **Akrit Sodhi, M.D., Ph.D.**, a retina specialist and the Branna and Irving Sisenwein Professor of Ophthalmology, and **Pradeep Ramulu, M.D., Ph.D.**, chief of Wilmer's Glaucoma Division and the Sheila K. West Professor of Ophthalmology.

After this patient experience, the Freedmans — philanthropists who have supported many causes, including a new children's playground at The York Jewish Community Center in Pennsylvania where Randy Freedman was executive director for 12 years — wanted to contribute to furthering Daoud's work. Their gift will be used to establish The Freedman Fellowship, which will support the work of two consecutive fellows with the goal of training them to specialize in the kinds of complex corneal and cataract cases for which Daoud is known.

During this fellowship, which will begin in July 2023, each fellow will serve for a one-year period, and each will be directly involved in Daoud's research and his clinic and will work on a variety of cases, often within the same day. (On a recent Wednesday, Daoud's schedule included every form of corneal transplant, three lens replacements

and two complex cataract surgeries.)

Establishing a fellowship was appealing to the Freedmans because of its clear impact. "We try to look for opportunities that are measurable as to what the potential outcomes could be," says Randy Freedman. "This fellowship fit because we knew this would be a specific project that would move Dr. Daoud's field forward in a very clear way."

"Our intent would be that the two fellows will improve their skills and techniques through this fellowship, which will then help hundreds or thousands of patients like me," adds Freedman.

For Daoud, the support of patients like the Freedmans is a necessity in furthering his work and continuing to provide the most advanced care for other patients. "We are very fortunate in that sometimes patients become partners, and, without that support, much of what we do might not be possible," he says. ●

"Our intent would be that the two fellows will improve their skills and techniques through this fellowship, which will then help hundreds or thousands of patients like me."

— HOWARD FREEDMAN

HOW TO SUPPORT THE WILMER EYE INSTITUTE

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.

TYPES OF GIFTS

Cash Gifts: Gifts of all sizes made by check or credit card provide immediate support to the Institute. Gifts can be made outright or pledged over a period of up to five years.

Matching Gifts: Many employers offer a matching gift program. Complete the employee's section of the Matching Gift Form provided by your employer and mail the form to us. We will take care of all the other details and paperwork.

Memorial and Tribute Gifts: Memorial and tribute gifts are a wonderful way to commemorate family, friends or even a special physician. Any gift can be made in memory, or in honor, of an individual.

Stocks and Securities: Giving stock and other appreciated securities directly to the Wilmer Eye Institute offers an appealing mix of tax benefits and direct support for Wilmer. Appreciated securities are those that are worth more today than when you acquired them. Advantages include an immediate income tax deduction on the fair market value of your stock gift and avoidance of capital gains tax.

Gift Planning: Our Office of Gift Planning can provide you with resources to help fulfill your philanthropic wishes in coordination with your overall financial and estate planning. For more information, visit **giving.jhu.edu/giftplanning**.

Wilmer Expands Support for Residents

By Jon Bleiweis

In a display of Wilmer's spirit of continuous improvement, the Wilmer community recently opened a newly renovated and expanded Residents Workroom at the Patient Access Center for the Eye (PACE) clinic.

The space, at about 700 square feet and nearly twice as large as it previously had been, now has workstations for each of Wilmer's 15 residents, along with updated amenities. "It's night and day," says **Narine Viruni, M.D.**, one of the residency program's two assistant chiefs of service, who was a resident at Wilmer from 2017 to 2020.

Strategically located within the PACE clinic where the residents see their patients, the space was renovated to improve resident wellness and increase opportunity for collaboration, says **Fasika Woreta, M.D., M.P.H.**, director of Wilmer's residency program and Wilmer's Eugene de Juan, M.D. Professor of Ophthalmic Education.

The concept for the new space was to give residents their own places to work, while also having a common area for social interaction. Wilmer Director **Peter J. McDonnell, M.D.**, envisions the residents using the space as a place to grab a bite of lunch while reading the latest scientific journals or to gather at the end of a long day to discuss particularly challenging cases.

Loka Thangamathesvaran, M.D., a member of the residency class of 2023, says the new space is more accommodating and she has already noticed an increased feeling of togetherness since the residents now have a larger space where they can gather. "There's a lot more positive energy within the workplace," she says. "I think it creates a team environment."

Funding for the renovations included a donation from **Parag Parekh, M.D.**, a graduate of the Wilmer residency class of 2007. Parekh wanted to support the residents while also honoring **Henry Jampel, M.D., M.H.S.**, the Odd Fellows Professor of Ophthalmology, and **Esen Akpek, M.D.**, the Bendann Family Professor of Ophthalmology, who are on Wilmer's faculty and mentored Parekh when he was a resident. The renovation was also supported by the family of the late **Mark Raymond Sawusch, M.D.**, who was a member of the class of 1989.

As a result, the project strengthens the legacy of the Wilmer residency, connecting current and future Wilmer residents with residents of the past. "Giving back to the residency that trained them is amazing," Woreta says. "Residency can be a stressful time in a doctor's life and this shows we care about them. We're grateful for this generous support." ●

Opposite page: From left to right, Wilmer Director Peter J. McDonnell, Assistant Chief of Service Kapil Mishra, Residency Director Fasika Woreta, alum Parag Parekh (cutting the ribbon), faculty members Esen Akpek and Henry Jampel at the Residents Workroom dedication

Below: Wilmer residents enjoy their new workroom.

The **Aida de Acosta Root Breckinridge Award** honors the enduring legacy of women at Wilmer.

A Trailblazer's Philanthropic Spirit Lives On

By Amy Entwisle

By all accounts, **Aida de Acosta Root Breckinridge** was a trailblazer. At age 19, she became the first woman to pilot a motorized aircraft when she flew a dirigible solo over Paris. In 1922, when Breckinridge developed glaucoma, she sought the care of esteemed ophthalmologist William Holland Wilmer, called "the greatest eye surgeon the U.S. has ever had" by *Time* magazine. Though Breckinridge had lost sight in one eye, Dr. Wilmer was able to save her other eye.

Inspired by the care she received, Breckinridge organized a fundraising campaign that resulted in $3 million to fund the establishment in 1925 of The Wilmer Ophthalmological Institute at Johns Hopkins University. It was a teaching and research center, and the first eye institute in the country.

Today the Wilmer Eye Institute is the world's largest ophthalmology institute. It has educated thousands of students, many of whom have gone on to become trailblazing leaders in the field. The institute is universally recognized as a research powerhouse, recently named the number one ophthalmology program in the country in a survey of other ophthalmology program directors. Most importantly, it has helped protect and preserve the eye health of millions of people.

Wilmer Director **Peter J. McDonnell, M.D.**, calls Breckinridge a visionary whose energy and determination helped make the Wilmer Eye Institute a reality. "After Dr. Wilmer performed surgery to save Mrs. Breckinridge's vision and the nurses at the hospital informed her that there would be no one to carry on Dr. Wilmer's work, she took it upon herself to reach out to his grateful patients and raise the funds required to establish the institute that bears Dr. Wilmer's name and would allow him to train the next generation of leaders in ophthalmology," McDonnell says. Wilmer did just that, establishing an institute that integrated patient care, teaching and research under one roof.

> "We thought there would be no more meaningful a way to honor her memory than to give the award to women who today are contributing their time and talents to further Wilmer's mission."
>
> — PETER J. MCDONNELL

Breckinridge's philanthropic spirit lives on at Wilmer today through the advocacy of people who, like her, share a passion for helping the blind and visually impaired, and whose contributions — monetary or otherwise — help support vital research, further education, and purchase equipment and even eyeglasses for those in need.

To honor those who embody the spirit of Breckinridge, in 2012 McDonnell established the Aida de Acosta Root Breckinridge Award. "One hundred years ago, when Mrs. Breckinridge achieved the goal of establishing the Wilmer Eye Institute, the contributions of women were often underappreciated and underrecognized," McDonnell says. "We thought there would be no more meaningful a way to

honor her memory than to give the award to women who today are contributing their time and talents to further Wilmer's mission," he says.

McDonnell presented the inaugural Aida de Acosta Root Breckinridge Award to **Norma Tiefel**, who has served for decades as a member of the Wilmer Board of Governors, "providing her wise counsel to Wilmer's directors, as well as her generous philanthropy," McDonnell says.

In 2014, **Sandra Forsythe** received the award "for her tireless advocacy for the blind and visually impaired, both here at Wilmer and in her hometown of Chicago." In presenting the award, McDonnell cited the work of Forsythe and her husband, Rick, in, among other efforts, supporting the design and construction of The Robert H. and Clarice Smith Building, calling it the most modern ophthalmic surgical and research facility in the world.

Subsequent award recipients include **Meredith B. Cross**, for her work "as a vocal advocate for individuals suffering from vision loss related to immune system disorders, and an ardent supporter of Wilmer's program for caring for this population," and, in 2022, **Mary Bartkus**.

"Mary Bartkus has been a great partner of Wilmer's Glaucoma Division for many years, helping to foster the career development of our junior faculty who will be tomorrow's leaders in that specialty," McDonnell says, adding that she has been a resource and role model for Wilmer's emerging women leaders.

One can only imagine the satisfaction with which Breckinridge would view the Wilmer Eye Institute of today — and the enormous contributions of the women who continue to carry out a legacy she established nearly a century ago. ●

Mary Bartkus is the 2022 recipient of the Aida de Acosta Root Breckinridge Award.

AIDA DE ACOSTA ROOT BRECKINRIDGE AWARD RECIPIENTS

Since its inception in 2012, the Aida de Acosta Root Breckinridge Award has been bestowed five times.

"Mary Bartkus has been a great partner of Wilmer's Glaucoma Division for many years, helping to foster the career development of our junior faculty who will be tomorrow's leaders in that specialty."

– PETER J. MCDONNELL

MARY BARTKUS, 2022

MEREDITH B. CROSS, 2018

SANDRA FORSYTHE, 2014

NORMA TIEFEL, 2012

By Amy Entwisle

The Tradition Continues

Jo Merlau's vision has brought Wilmer pride to the forefront.

As a member of Wilmer's Board of Governors, **Jo Merlau** brought a unique perspective to the table. A lifelong marketing professional, she had worked across industries and served as a consultant for numerous entrepreneurial enterprises.

Opposite Page: From left to right, Tim Thompson, Jo Merlau, Melanie Brown, Amy Entwisle and Mike McElwaine

Merlau knew of Wilmer's many strengths — its rich history, clinical expertise and protocol-defining research. But she realized there was much more happening at Wilmer that stayed at Wilmer. There were stories of incredible dedication and care, of sight-saving surgeries and cutting-edge research that simply weren't reaching the outside world.

Never one to sit on the sidelines, Merlau convinced Wilmer Director **Peter J. McDonnell, M.D.**, that what was needed was a communications team, one that could help disseminate news of the exciting things that were happening at Wilmer every single day.

In 2019, **Melanie Brown** became Wilmer's inaugural director of Marketing and Communications. In consultation with Merlau, Brown hired writers, content strategists and a photographer to help translate Wilmer's often complex research and tell the stories of those whose sight had been saved or restored.

Today, the Wilmer communications team includes a six-member staff that oversees the promotion of Wilmer's 150 faculty members' accomplishments, research and patient care stories to a national and global audience. The team also highlights the work of Wilmer support staff — the technicians, nurses and administrators who are a vital part of the patient care team — through articles and an internal communications effort.

"These are the first people patients see when they come into the clinic," says **Tim Thompson**, a writer who brings a unique perspective to the role: Thompson

In November, Wilmer Director **Peter J. McDonnell** honored **Jo Merlau** with the **Aida de Acosta Root Breckinridge Award**. "Jo Merlau has generously shared her experience in the business world to help us at Wilmer understand how best to communicate to the outside world the work being done at Wilmer to improve the care of those suffering from eye disease," McDonnell says.

came to his current position after having served for eight years as an ophthalmic technician at Wilmer. These days, he writes profiles of staff members that are then published in digital newsletters. Thompson says he gets a lot of feedback from fellow employees who are happy to be seen and to know they're recognized for their work. "They're excited about the marketing team and about the message we're sending to everyone," he says.

Mike McElwaine, who started his career at Wilmer in 2001 as a graphic artist before joining the communications team as a photographer in 2019, says the attention has increased morale. "When Melanie came in, Wilmer pride came to the forefront. It wasn't that everybody was all of a sudden proud, it was that it was a priority to show why we're proud," says McElwaine.

MEETING THE CHALLENGE

Brown says that working at Wilmer is a bit of a dream. "In communications, we are always trying to find an event to promote or create new content, and here it was just a matter of telling a story that's already occurring. We're not generating new content, we're just telling a story that's been going on for almost a century," she says.

Still, Merlau says that change — even change for the good — can be hard, especially when it represents a departure from traditional attitudes long held at a storied institution like Wilmer: the belief that you do the best work and it speaks for itself. Brown acknowledges the challenge, but says that with the creation of the communications team, faculty members have been given a platform to talk about their important work, which drives interest in their research and their efforts. "We've created a voice for Wilmer in the modern digital world," she says.

Merlau points to the positive attitudes and collaborative spirit of the communications team in helping to overcome any pushback. "They were so easy to work with. They were all in," Merlau says. But Brown is quick to credit Merlau. "Jo has been instrumental in the development and success of our group. She has given up much of her time and dedicated herself to the mentorship of our group to ensure we have a firm foundation on which to build."

In November, McDonnell honored Merlau with the Aida de Acosta Root Breckinridge Award. "Jo Merlau has generously shared her experience in the business world to help us at Wilmer understand how best to communicate to the outside world the work being done at Wilmer to improve the care of those suffering from eye disease," McDonnell says.

In accepting the award, Merlau said, "The Breckinridge Award is about a steadfast, determined, purposeful woman with a singular goal in mind: creating the Wilmer Eye Institute. I am honored to be receiving this award. My goal and mission was to create a world-class digital communications department at Wilmer to tell the stories of all the wonderful things happening at Wilmer every day.

"I am so proud of Melanie Brown and her team. We have created a voice for Wilmer, an incredible amount of content telling the Wilmer story to the world. I am inspired every day by working with this team and seeing what we've been able to accomplish, at lightning speed." ●

A Champion for Residents

By Jessica Wilson

While much has changed at the Wilmer Eye Institute since its founding nearly 100 years ago, one constant has remained: the dedication of the people who work here. For example, Wilmer has had only six directors over the past 97 years. Something about Wilmer inspires loyalty to the people and place.

Cathy Taylor, a beloved staff member who died in 2022, exemplified this dedication. As the residency program coordinator for more than 15 years, she helped ensure the program ran smoothly and the residents were provided all they needed during their three years at Wilmer.

"Cathy was an integral part of our residency program," says **Fasika Woreta, M.D., M.P.H.**, the Eugene de Juan, M.D. Professor of Ophthalmic Education and current residency program director. "She was a source of endless support from the time I arrived as a resident in 2008, returned as chief resident, joined the Wilmer faculty and when I became director of the program."

Taylor's institutional knowledge was beyond compare, but what made her truly beloved was her devotion to the residents.

"Ask anyone and they'll say that Cathy was absolutely buoyant. She was the beating heart of our residency program. She provided a listening ear, always shared needed words of encouragement, and had a laugh so loud it would literally reverberate down the halls," says **Ian Han, M.D.**, a former resident and chief resident at Wilmer.

She was a true advocate for residents during what Woreta says is, "probably the most stressful time in a doctor's life." Because of this, faculty members established the Cathy Taylor Staff Resident Advocate Award to be given to a staff member or members who go above and beyond to support Wilmer's residents. Faculty members and alumni have funded the award so that its winner or winners receive both recognition and a monetary award.

The inaugural recipients of the award are **Irene Lao**, medical training program administrator, and **Shelley Casey**, clinic manager of the Patient Access Center for the Eye (PACE) — Wilmer's ophthalmology resident clinic. "Cathy was such a champion for her residents, and to be recognized as an advocate worthy of her comparison is heartwarming," says Lao.

Casey echoes these sentiments. "Having your work recognized always feels good, but to be associated with Cathy Taylor, for whom generations of Wilmer residents held so much affection, is really humbling. I'm honored to have the work I find so rewarding recognized in such a special way." ●

Cathy Taylor is remembered as the 'beating heart' of Wilmer's residency program.

2022 EVENTS

▲ Left: Wilmer Board of Governors meet in the Baltimore Marriott Waterfront for an update on the Institute.
Right: Wilmer Director Peter J. McDonnell congratulates Mary Bartkus upon her receipt of the Aida de Acosta Root Breckinridge Award.

BOARD OF GOVERNORS MEETING MAY 17

The Wilmer Eye Institute hosted the first hybrid meeting of its Board of Governors. Wilmer Director **Peter J. McDonnell, M.D.**, awarded Board Member **Mary Bartkus** with the Aida de Acosta Root Breckinridge Award for her efforts to support and advocate for the Wilmer Glaucoma Division, its funding priorities and its faculty members' research.

▲ From left to right: Wilmer Director Peter J. McDonnell, J. W. Marriott, Jr., Peter Gehlbach and Johns Hopkins University President Ronald J. Daniels

DEDICATION OF THE J. WILLARD MARRIOTT, JR. PROFESSORSHIP IN OPHTHALMOLOGY MAY 17

Peter Gehlbach, M.D., Ph.D., was celebrated as the inaugural recipient of the J. Willard Marriott, Jr. Professorship in Ophthalmology. At a dedication ceremony at the Baltimore Marriott Waterfront, Wilmer Director **Peter J. McDonnell, M.D.**, and Johns Hopkins University President **Ronald J. Daniels, J.D., LL.M.**, remarked on the tradition of endowed professorships and their impact on our ongoing mission of teaching, research and patient care. They lauded Gehlbach's contributions to the field, including his transformative contributions to the emerging field of robotics as applied to retinal microsurgery.

DEDICATION OF THE ALLAN AND CLAIRE JENSEN PROFESSORSHIP IN OPHTHALMOLOGY JUNE 3

Megan Collins, M.D., M.P.H., was celebrated as the inaugural recipient of the Allan and Claire Jensen Professorship in Ophthalmology. **Allan Jensen, M.D., '72** is a past-president of the American Academy of Ophthalmology. Collins is a leading expert on the school-based delivery of eye care, particularly in underserved communities.

A dedication ceremony was held at the Robert H. and Clarice Smith Building. Speakers and dignitaries included Wilmer Director **Peter J. McDonnell, M.D.**; **Sunil Kumar**, provost and senior vice president for academic affairs at the Johns Hopkins University; **Allan and Claire Jensen**; and **Landon King, M.D.**, executive vice dean for the Johns Hopkins University School of Medicine.

▲ From left to right: Megan Collins, Allan Jensen, Claire Jensen and Wilmer Director Peter J. McDonnell in front of the Professorship Wall, where plaques commemorating Wilmer's endowed professorships and their recipients are displayed

THE 80TH WILMER RESIDENTS ASSOCIATION MEETING JUNE 3

The Wilmer Residents Association (WRA) held its 80th annual Clinical Research Meeting and graduation dinner, in-person for the first time in three years. During the meeting, residents presented research papers.

Later, staff, faculty and guests gathered at the Marriott Residence Inn Baltimore at The Johns Hopkins Medical Campus to celebrate and commemorate Wilmer's graduating residents.

◄ Front row: From left to right, Wilmer Residency Director Fasika Woreta, Wilmer Director Peter J. McDonnell and Assistant Chief of Service (2021-2022) Sophie Cai with the Wilmer residents for the 2021-2022 academic year

2022 EVENTS

PRESIDENT OF LIONS CLUBS INTERNATIONAL VISITS WILMER AUGUST 12

Lions Clubs International President Brian Sheehan visited the Lions Vision Research and Rehabilitation Center at the Wilmer Eye Institute to celebrate 35 years of the partnership between the Lions and Wilmer that began with the creation of the Lions Vision Research Foundation by the Lions of Multiple District 22. The visit also celebrated 100 years of the Lions MD22.

◀ From left to right: Lion Jeanne Kusiak, Lion Ann Reiver, Wilmer faculty member Gislin Dagnelie, Lion Lori Sheehan, Lions International President Brian Sheehan, Wilmer faculty member Judith Goldstein, Lion Clement Kusiak and Lion Ted Reiver

TOMATOES AND JAZZ AUGUST 20

Wilmer Director **Peter J. McDonnell, M.D.**, was invited to speak about the funding priorities of the Wilmer Eye Institute at an event hosted by Joe Cannistraci at his Italian eatery Enoteca La Storia in Los Gatos, CA. Cannistraci was inspired to host the event after a family member received care at Wilmer. The patient was able to schedule a same-day appointment at Wilmer after their local hospital on the West Coast was unable to schedule an appointment sooner than ve months from the day they called.

▲ In Los Gatos, CA, a patient's family member welcomes attendees to an event to learn more about the Wilmer Eye Institute.

CURING COATS FUNDRAISER SEPTEMBER 24

Long-time Wilmer supporters Barbi and Kevin Smole hosted the annual Curing Coats Fundraiser. After their son Sean's diagnosis of the rare eye condition Coats' disease, the Smoles launched the fundraiser, which includes food trucks, music and ra es. This year the event involved two breweries, seven food trucks and 300 people.

The funds raised support research at the Wilmer Eye Institute. **James Handa, M.D.**, chief of the Retina Division, and **Akrit Sodhi, M.D., Ph.D.**, spoke at the event.

◀ From left to right: James Handa, best friends Sean Smole and Jack Pavlovcak, and Akrit Sodhi display the funds raised by Smole and Pavlovcak to support Sodhi's research at Wilmer.

▲ Wilmer alumni, faculty members and friends, including Wilmer Director Peter J. McDonnell and Wilmer Director Emeritus Morton Goldberg, enjoy the view of Chicago from Gibsons Italia Rooftop.

WILMER RECEPTION AT THE AMERICAN ACADEMY OF OPHTHALMOLOGY ANNUAL MEETING OCTOBER 2

The Wilmer Residents Association hosted their first in-person reception at the American Academy of Ophthalmology since 2019. Wilmer alumni and faculty members had the opportunity to mix, mingle and catch up with longtime friends and colleagues at Gibsons Italia Rooftop in Chicago, IL.

◀ Wilmer alums Wilmer Director Peter J. McDonnell, Jonathan Javitt and Anne Hanneken

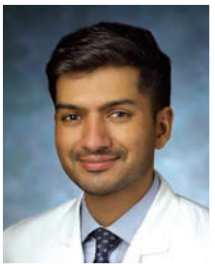
WORLD ASSOCIATION OF EYE HOSPITALS ANNUAL MEETING OCTOBER 3-7

The Wilmer Eye Institute hosted the World Association of Eye Hospitals Annual Meeting this year. The association represents ophthalmic centers of excellence from more than 55 countries and meets annually to present research and foster collaboration on eye hospital management, research, education and patient care.

▲ Cathy Kowalewski, administrator of the Wilmer Eye Institute and current president of the executive board of the World Association of Eye Hospitals, welcomes attendees to the Annual Meeting, which was held at Wilmer for the first time in 2022.

Residents

2022–2023



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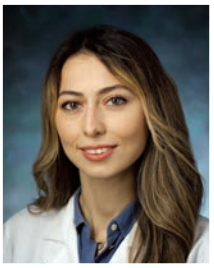

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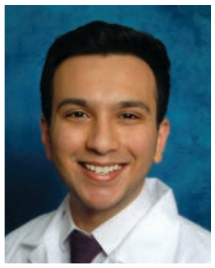

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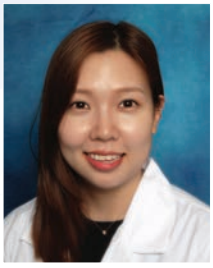

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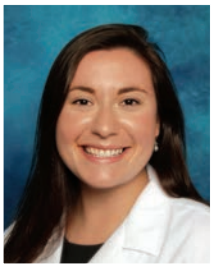

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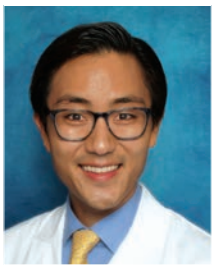

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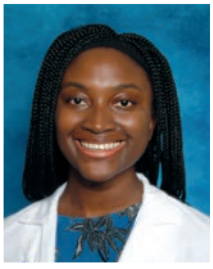

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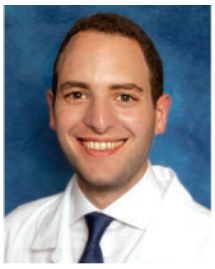

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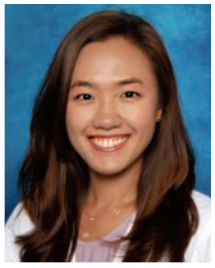

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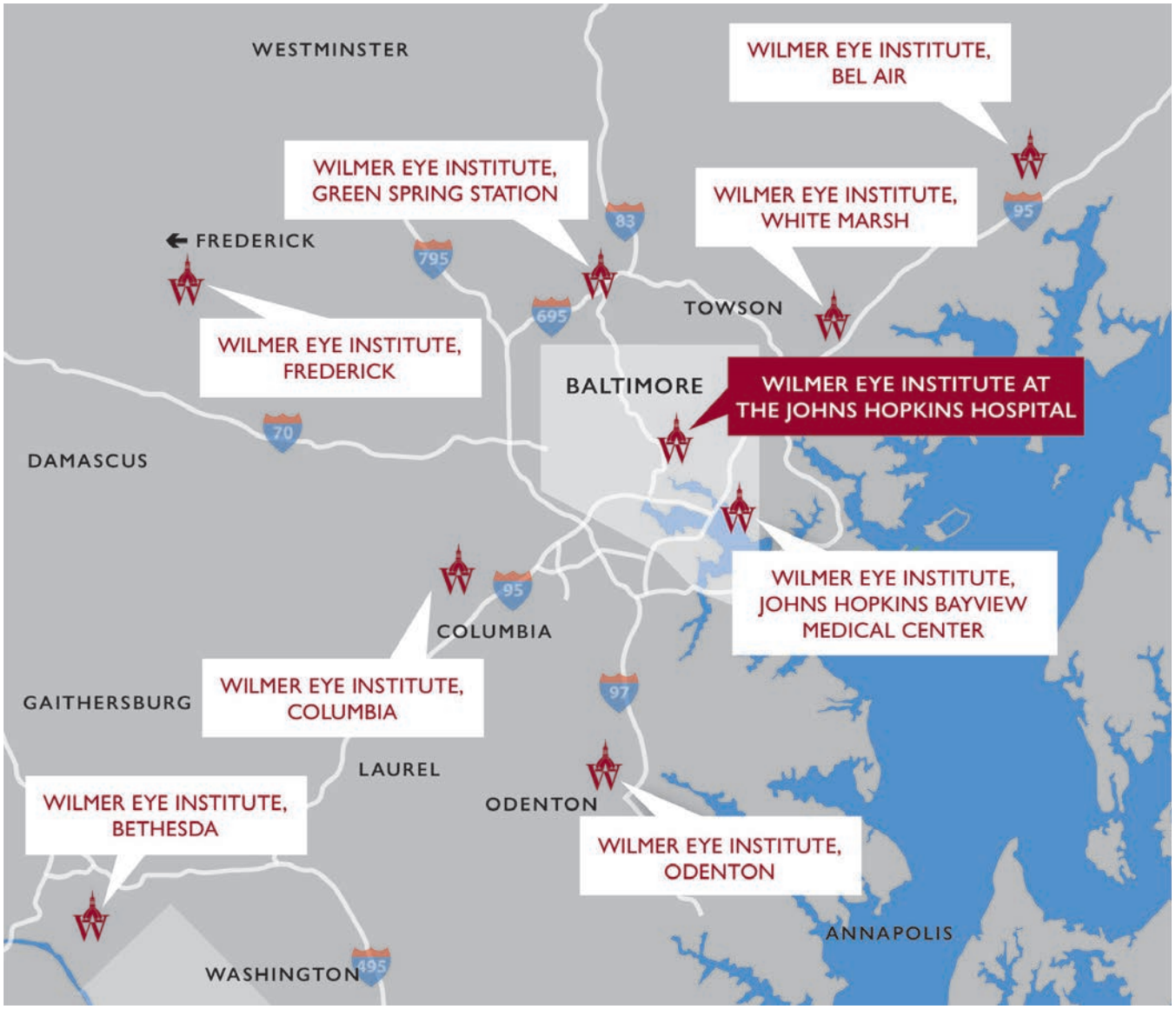

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