From innovation to dissemination of treatments and cures, when it comes to the mission of the Wilmer Eye Institute, such change isn’t just promise, but fact:

No single group of faculty has influenced ophthalmology more across the planet than Wilmer graduates.

More than 100 alumni have become department chairs at academic centers around the world. They’ve brought with them more than eight decades of remarkable achievements that have literally saved the sight (and lives) of millions of people, a legacy of excellence that continues to this very day.

Changing the way the world sees.
From its founding, Wilmer has been about dynamic partnerships yielding outstanding achievement. It took a socialite, of all people, to recognize the sight-saving potential that one William Holland Wilmer could bring to his fellow man. Wilmer was perfectly happy in his Washington, DC, private practice when he crossed paths with Aida Breckenridge, a global traveler who had already lost the sight in one eye. On the verge of blindness, her eyesight was restored by Dr. Wilmer through two operations; In gratitude—and without Dr. Wilmer’s initial knowledge—Breckenridge co-opted his address book, contacted patients and friends alike, and helped raise more than $3 million dollars to create the Wilmer Eye Institute. Upon its opening in October of 1929 at Johns Hopkins, Wilmer humbly said, “Of the Institute I will not speak; I hope that its achievements may be more than any feeble words from me.”

In this, Wilmer Eye Institute has repeatedly exceeded its’ namesake’s greatest wish...
There is a momentum that builds within any great institution, a growing roll call of accomplishment that creates an expectation of success, for so often is that expectation realized. Such is the case at Wilmer, where collaborations have repeatedly supercharged individual efforts to save sight. Consider:

In the 1950’s, Bernie Becker made a startling discovery: Cardiac patients given Diamox to control fluid buildup around the heart also had lower intraocular pressure, which is a key to controlling glaucoma. Teaming with renowned Wilmer researcher Jonas Friedenwald, Becker brought Diamox to the clinic as the first effective Glaucoma oral treatment. It’s still in use today.

Stephen Kuffler’s 1950’s investigations into how the eye—specifically the retina—signals the brain created a wave of research that spanned a generation, leading to a 1981 Nobel Prize for two members of his team, David Hubel and Torsten Wiesel. The prize, for “their discoveries concerning information processing in the visual system,” informed an understanding of how a dominant eye is established in early childhood, and changed clinical practice for how ophthalmologists often deal with vision loss in kids.
Diabetes once meant eventual permanent vision loss and, in its worst form, blindness. That changed in the ‘60’s when Arnall Patz teamed up with the Hopkins Applied Physics Lab. The result—the Argon Laser—sealed blood vessel leaks in the eye associated with diabetic retinopathy, becoming the standard of care that salvaged sight for thousands of diabetics.

In the 80’s, Alfred Sommer proved that saving sight could also save millions of lives. His work—which won the prestigious Lasker price—showed that a four cent megadose of Vitamin A given twice-monthly to children in developing countries both prevented blindness and reduced death rates by an incredible thirty percent. In another outstanding international effort, ophthalmologist Hugh Taylor and epidemiologist Sheila West developed, in Sommer’s words, “a core, inexpensive, relatively easily-implemented strategy” to eradicate trachoma, a leading cause of blindness worldwide.

With two-thirds of the eye’s refractive power residing in the cornea, that area of eye has always held great interest and promise for Wilmer researchers. In the 90’s, Dr. Walter Stark and colleagues helped launch the excimer laser revolution, exploring the technology as a more precise way to excise scar tissue from diseased, cloudy corneas. The work forever changed for the better the way these patient’s eyes are managed and improved.
Buoyed by such monumental victories, Wilmer’s faculty has come to believe that no problem is too large to tackle.

In recent years, they’ve brought greater safety to millions of contact lens users [Wilmer’s Oliver Shein discovered that initial extended-wear lenses put users at risk for Microbial Keratitis, a painful and potential vision-robbing condition], while ophthalmologists David Guyton and Michael Repka have proven the value of new approaches to bring relief to the many children at risk for amblyopia and other disorders. Their methods for early detection and effective, easy-to-use treatments (such as substituting an eye drop for eye patching) have revolutionized clinical practice. At the other end of life’s pendulum, one of the greatest fears of older Americans was contracting age-related macular degeneration; the so-called ‘wet’ [advanced] form caused fluid leakage that could quickly destroy central vision. Those fears have been greatly alleviated by Dr. Neil Bressler and other members of Wilmer’s team of retinal specialists. Their first drug foray into halting the disease’s progression was impressive: Verteporfin worked for 65 percent of patients. But Bressler wasn’t satisfied with that number. Using the clinical vigor of his hero, the aforementioned Arnall Patz, he participated in clinical testing of a second drug, Ranibizumab. Bressler was curious as to what Ranibizumab could do for macular degeneration and diabetic retinopathy. The name may not flow of the tongue, but the results can’t be denied: Now, 90 percent of patients find their wet AMD halted in its tracks and the treatment of diabetic macular edema has been dramatically enhanced for the first time in a quarter century.

Which brings us to today...
To collaborate at Wilmer is to invest oneself in every aspect of understanding the generator of one of man’s most delightful and essential senses, sight.

From uncovering the eye’s cellular marvels to micro-surgically altering its flaws, Wilmer’s staff is constantly on a mission to investigate and improve every aspect of eye care. The joy, for so many of our partners, is their ability to see how research moves from the bench to the clinic, where what often starts out under the microscope in a lab becomes a new or better treatment for potentially thousands. That opportunity to become part of our team at any point along the investigative continuum is one of great satisfaction for our sponsors, as they can bring their resources to bear in a way that suits their goals and aspirations. Consider that:

- Across the disease spectrum, Wilmer basic science faculty is uncovering the genetic causes of many eye ailments. These include Macular Degeneration and Fuchs Dystrophy (a degenerative condition that affects the cornea). By identifying and understanding the function of genes and the enzymes they produce, researchers can map out where and why mistakes take place within vision development and function, and how those lead to different disease states;

- Which leads to identifying, at the cellular levels, ways in which problems can be fixed, suffering alleviated, and vision restored. Numerous Wilmer investigators are discovering ways to manipulate genes so that they function properly, with the hope of jump-starting the eye’s ability to repair itself. These new methodologies, which include drug development and the emerging field of nanotechnology (imagine reducing a tool to the size of a molecule and you’ve got the idea), all offer tremendous promise in clinical care;

- As does advances in surgery that are being pioneered at Wilmer. While there will never
be a replacement for the hand and eye of the skilled surgeon, the development of robotic devices allows said surgeon to operate with exquisite precision in areas that normally can’t easily be reached by hand. This essentially extends the surgeon’s reach in ways that are often more effective and less invasive than traditional surgery, offering greater safety to our patients and improved results. Add to that Wilmer advancements in imaging—ways for surgeons and ophthalmologists to see into parts of the eye never before viewed with such clarity—and microsurgery is being brought by Wilmer faculty to unparalleled heights;

- As are options that offer cures without the need for surgery. Notably, the development of biomaterials—medical devices and treatments that are compatible with normal eye function—may allow some patients with eye trauma to avoid the surgical suite. These materials both aid and jump-start the eye’s regenerative abilities. Specifically, Wilmer researchers are developing an adhesive that would permit certain eye injuries to be glued closed instead of requiring sutures. Other biomaterials and the use of nanotechnology could have even more dramatic impact, possibly serving as the gateway to artificial corneas.
These are just a few of more than a dozen of areas of research and clinical improvements being investigated at Wilmer. To say we’re excited about the potential for our work is an understatement. The opportunities for partnership and support are limitless, ranging from energizing an individual faculty member’s research investigations to multi-disciplinary partnerships attacking vision issues around the world. We’re always pleased and proud to meet with anyone interested in our programs, to discuss our mission of excellence, our vision for where we can make the greatest impact on the needs of the many, and the phenomenal results so many of our faculty have generated. To facilitate partnering, we’ve also established several giving streams. These include:

- The **Translational Research Fund**. As the name suggests, this fund is all about moving research from the bench to the bedside, taking basic research findings and developing them into drugs, devices, and other applications that will have powerful impacts in the clinic with our patients;

- The **Surgical Education and Innovation Fund**. This fund brings together the finest that industry and academic surgical research have to offer, creating partnerships that extend the huge, positive impact that biomedical engineering has had on eye care and eye surgery. Beyond creating new technologies, the fund will serve to create a center for dissemination, where surgeons from Wilmer and beyond will come for training to bring these new techniques to the world;

- The **Next Generation Fund**. The continuance of excellence is no accident; at Wilmer, while we celebrate our past, we’re cognizant of the next generation of outstanding researchers and clinicians that will take us to places we can barely imagine today. This fund will provide fellowships, professorships, and forgivable loans to those future members of the Wilmer family who will carry our mission into our second century of achievement.

Changing the way the world sees has been, and will always be our mission at Wilmer. We sincerely invite you to join us in this exciting, never-ending quest. Wilmer is a place of wondrous mystery, passionate curiosity, and, ultimately and most pleasing, answers that help each of us see a little bit more clearly, each and every day.

With Warm Regards,

Peter J. McDonnell, MD

Chairman, Wilmer Eye Institute
Open your eyes to the next generation of vision.
Changing the way the world sees.