

Summer 2020 · Issue #17

COVID-19 SOCIAL DISTANCING

We are happy to welcome our established patients back into the clinic. As our patient volume increases we will guidelines and precautions to minimize the spread of the virus. Our goal is to provide a maximally safe experience for our patients, staff and

You may see several differences as you enter. Depending on location, we may ask you to wait in your car until you are needed in the clinic, and we are restricting the office to patients only. If you need assistance getting to or through the office please let us know beforehand so we can make arrangements

Everyone will be wearing a mask, so please bring yours to your visit. We also have a screening station for checking your temperature, red tape for encouraging safe distance patient, and shields on exam equipment between you and your examining physician.

We appreciate your continued *patience as we follow these* afeguards. We will get through this together!

CONGRATULATIONS!















The Physicians and Staff at Retina Associates of Kentucky would like to CONGRATULATE the first graduating class from the UPIKE Kentucky College of Optometry! We are proud to have been a part of your path through the Externship program, Case Study evenings and Preceptorships.

We have thoroughly enjoyed our interactions with each of you and look forward to collaborating with you as part of Kentucky's eye care community. Here's to The Class of 2020!

Safeguarding Our Office During COVID-19



RESEARCH

If you are interested in information regarding past clinical trials or participation criteria in our current clinical trials, please contact our research department:

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OUR PHYSICIANS

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preserve their vision.

This patient was diagnosed with proliferative diabetic retinopathy (PDR) and diabetic macular edema (DME) in both eyes, along with an associated vitreous hemorrhage (VH) in the left eye. PDR occurs when enough of the blood flow to the retina





THE RETINA TIMES

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CASE STUDY: Patient Care During COVID-19

The COVID-19 (or SARS-CoV-2) pandemic has had a tremendous impact on each of our lives. We have been required to make adjustments to our daily activities: limiting travel, wearing masks, practicing social distancing. All of these measures have been intended to slow the spread of COVID-19 and reduce the risk of overwhelming our health care system, causing greater loss of life. Despite this virus, however, life does go on and that includes other, more common diseases. We at Retina Associates of Kentucky have remained open throughout the pandemic because so many of our patients require treatment to save and

One such patient was a 55 year old woman with type 2 diabetes who presented to our office with progressive blurring of vision in both eyes and new floaters in the left. Her vision measured at 20/50 in both eyes. While she does have cataracts, it was apparent that diabetic retinopathy was playing a major role in her vision. Clinical photos of her eyes can be seen in Figure 1. The right eye has numerous microaneurysms and blot hemorrhages, as well as scattered lipid exudate in the macula. The macula of the left eye is similar, though it lacks the lipid exudate. Both eyes have extensive blot hemorrhages in the periphery. Prominent in the periphery (left) of the right eye are areas of ischemia or blood vessels without adequate blood flow. Areas of neovascularization or new blood vessel growth are seen in both eyes, including on the optic nerves. The neovascularization on the optic nerve of the left eye has resulted in a small vitreous hemorrhage which is the reason for her new floaters. Optical coherence tomography (OCT) scans of her retinas (Figure 2) demonstrate macular edema and subretinal fluid in the right eye, as well as a tractional membrane from the neovascular tissue on the optic nerve. The left eye has similar, though less severe findings.

is damaged that the retina tries to grow new blood vessels in order to compensate. This is predominantly in response to a chemical that is released called vascular endothelial growth factor (VEGF). Unfortunately, the new vessels grow in the wrong place, do not mature properly, and are prone to breaking open, causing VH. These vessels can result in tractional membrane formation, as seen in this patient. If the tractional membranes become severe enough, they can even detach the retina. DME can also be the result of extensive damage to blood flow. The same VEGF that causes neovascularization can cause the macula to swell. In addition, damaged blood vessels can leak fluid directly into the macula as the vessel walls become weakened.

Due to the presence of both PDR and DME, the decision was made to use a combination approach to treatment. An injection of a VEGF blocking medicine called Avastin was given to both eyes. This provided rapid control of the main factor involved in the neovascularization and edema. To provide more durable control of the disease over the long term, panretinal photocoagulation (PRP) was applied to the peripheral retina of both eyes in alternating sessions over 4 weeks. PRP drives down release of VEGF in the areas where the retinal blood flow is most damaged. Because the laser spots are small and spaced apart from each other in the peripheral retina, the patient rarely notices anything has been done.

These treatments were ongoing throughout the peak of the pandemic and have hopefully put this patient on the road to visual recovery and stabilization. The importance of blood sugar control, however, cannot be underestimated. We can successfully treat many aspects of diabetic retinopathy, but if the blood sugar remains uncontrolled, it is only a matter of time before permanent vision loss occurs. Diabetic retinopathy is the leading cause of legal blindness in working age individuals in the US. If you have diabetes, make sure you work with your primary care physician or endocrinologist to maximize your blood sugar control and be sure to have an eye exam at least once per year.





Figure 1. Photos of the right and left eyes. Note the lack of blood flow (ischemia) on the left hand side of the right eye photo. Both eyes demonstrate numerous microaneurysms (red dots) and hemorrhages (larger red spots). Lipid exudate (yellow spots) is seen in the macula of the right eye (top). Areas of new blood vessel growth (neovascularization) are seen on the optic nerve and other areas of both eyes. A small vitreous hemorrhage (VH) can be seen near the optic nerve of the left eye



Figure 2. Optical coherence ography (OCT) m cross sections of both eyes highlight the diabetic macular edema (DME). Subretinal fluid is also seen in the right eye (top cross section). Tractional membranes from the neovascularization of the optic nerves can be seen on the surface of the retina in each eye.



Submitted by Todd J. Purkiss, MD, PhD





THE **RETINA** TIMES



In Honor of Our Founder

William J. Wood, MD

It doesn't take long when talking to Doctor William Wood to realize that *Retina Associates of Kentucky was* no "accident." It was not a result of a random meeting of world class *Vitreoretinal surgeons who all had the* same goals, principles, and a love of all things Bluegrass.

William was born to William and Ruth Wood some seven decades ago here in Lexington, Kentucky. Doctor Wood's father was a farmer, involved in agribusiness, and introduced on his farm what is now known as cluster housing. William clearly gained a fair amount of his business acumen from his dad. In junior high school, William's father gave him land and barn space to breed and raise his own animals. There was one caveat: the young William would need to tend and care for the animals and pay for all of their expenses, and in return he could keep all profits. It turned into a good business for the hard-working teenager. His mother, Ruth, hailed from Somerset. William's adventurous spirit was undoubtedly drawn from her side as she headed to NYC at the age of 19 to pursue a career in design. Ruth graduated from the Pratt Institute, a university in New York where she developed her skills in the fine arts and became a visionary interior designer.

William was the youngest of 3 brothers. Being 6 years the junior of Thomas and 4 years the junior of Robert, William often had to fend for himself. William also found an interest and pleasure in the discipline of farming. This interest led to a close relationship with his father. Both the elder Wood brothers became successful in their own rights with Thomas becoming a landscape architect and land planner who helped develop the Lexington Man-O-War areas, and Robert who used his legal education to further his coal and real estate interests.

Doctor Coleman Johnston, a neighbor and founding surgeon at the UK School of Medicine, was a key influence on William from a young age. He was a farmer as well as a renowned surgeon. He talked to William, beginning in his teenage years, about being a doctor and medical careers.

William was independent from a young age. He was selected to attend the newly developed UK school of secondary education in second grade. He wrote and illustrated a book in the fifth grade and graduated from the university high school having an opportunity to learn from UK professors and participate alongside UK students in activities like band and athletics. Attending a school in downtown Lexington as a child growing up on a farm outside of the city was no easy task. The ever resourceful Ruth Wood discovered a bus route that would take workers to a nearby rural Army Depot and she arranged for the drivers to pick William and his brothers up on their way back to town to deliver them to school.

College for William meant staying close to home. His choices came down to Transylvania University where he was offered a four year music and trumpet scholarship or UK. He chose UK due to the diversity of classes. William entered undergrad as a pre-med major but he was very

interested in business. He excelled in his business classes and was accepted for an MBA at the prestigious Kellogg School of Business which at the time was the number one business school in the US.

It was early in his senior year of college that William felt the pull in his heart toward a career in medicine. One problem was that he did not have the right classes or experience to qualify for medical school. As fortune (or fate) would have it, William's longtime friend, Bill Offutt, (now a retired Lexington ophthalmologist), introduced him to the chair of the department of surgery, Doctor Ben Eisman, who became a giant in 20th century surgery. Doctor Eisman was looking for qualified students to help in his lab studying liver transplantation techniques. William took the position, was trained in the UK experimental surgical laboratory, and worked overtime to make up the classes needed to qualify for medical school. Not only did he do enough to gain entrance into the UK School of Medicine but William excelled in the lab. He wrote numerous papers and even presented at the American College of Surgeons meeting as an undergraduate student which is unheard of even today.

William kept up his laboratory work even as a medical student. In fact, his work ethic led the new chairman of surgery, Doctor Ward Griffin, to take him on in his laboratory. Dr. Griffin served as a mentor to William, and it was assumed he would pursue a career in general surgery.

William's curiosity, however led him to want to observe all fields of surgery - ENT, neurosurgery, orthopedics and the lesser known field of ophthalmology. At the time, ophthalmology was not a "department" at UK, but rather a division of the department of surgery. UK hired Doctor Johnathan Wirtschafter, A Hopkins Wilmer trained neuro-ophthalmologist to be the head of the division. He was tasked with leading the division into that of a department. Dr. Wirtschafter brought with him a young retina specialist named David Eifrig who would later go on to become the founding chairman at the University of North Carolina. These two key figures would enlighten William about the benefits of ophthalmology as a career and importantly, the amazing Wilmer Eye Institute where they trained.

With his mind made up to pursue a career in ophthalmology, William was left to decide where to pursue his training. Anyone who knows William J. Wood knows that for things that are important (and training is critical in medicine), he will accept only the best. Hence, William only applied to 3 residency programs: the Wilmer Eye Institute, the Bascom Palmer Eye Institute (at the time known as "Wilmer South" due to the influx of Wilmer trained physicians to Bascom), and Al Somer.

Doctor Ron Michels, a legendary figure in retina, was William's senior resident. William's training was strenuous, with thirty-six hour shifts in the Wilmer Eye ER and relentless resident clinics. He worked 6-7 days per week absorbing everything one could about the field of ophthalmology.

fellowship.

William decided, after completing his residency, to consider only two retinal fellowship positions: Bascom Palmer or Massachusetts Eye and Ear Infirmary. Bascom was the "hot" fellowship at the time which led it to be crowded with fellows desiring to train with the likes of Donald Gass and Robert Machemer. Instead, William chose the equally respected road that took him to Boston to train under the legendary Doctor Taylor Smith. Dr. Smith was influential not only in the field of retina but also in the field of ocular pathology. Working with Dr. Smith would afford William the opportunity to be more hands-on in surgery with large numbers of scleral buckles and other types of procedures in his year of training. He also had the opportunity to train with associates of Charles Schepens who developed the indirect

and Wills Eye Hospital in Philadelphia. William found himself amongst the most elite medical students from Ivy League schools when interviewing. Yet it was William's research, publications, and work ethic that made him stand out from the rest. William had his choice of all 3 historically great programs. He selected the Wilmer Eye Institute for his residency training program. William not only trained with the greats in the field of ophthalmology at the time but also alongside the future stars in ophthalmology such as his junior residents Neil Miller, Harry Quigley,

The field of Cornea initially was of great interest to William. The intricacies of suturing corneal transplants with fine sutures was a skill that was nearly unmatched, and he thought long and hard about pursuing a cornea fellowship but Doctor Ron Michels had returned to the Wilmer Eye Institute following a fellowship with Doctor Robert Machemer (the inventor of the vitrectomy machine) at Bascom Palmer. He brought with him this novel technology called "closed vitrectomy". Prior to this, vitrectomy surgery was performed "open sky" by peeling back the cornea and physically removing the vitreous from the opening. Upon assisting Dr. Michel's first vitrectomy surgeries at Wilmer, William knew immediately what field in ophthalmology he would purse.

All Wilmer third year residents traditionally spent a very busy surgical rotation in Iran at the leading regional eve hospital founded by the Shah and supervised by Wilmer. William gave up this coveted rotation to stay in Baltimore and work with Dr. Michels on vitrectomy during a mini-

ophthalmoscope, and spent one day per week at the Joslin Diabetes Center training with Doctor Lloyd Aiello who was the father of diabetic eye disease in the United States. William brought with him his knowledge of pars plana vitrectomy from Baltimore and helped introduce it to the Boston retina community helping train and mentor many of his mentors during his time there.

The Wilmer Eye Institute encouraged all graduating residents to pursue fellowships elsewhere. Each year one resident was selected and asked to return to Wilmer as chief resident, supervising the residency program, and as a faculty member. William was the one selected from his class but had promised his family that he would return to Lexington and he was forced to decline this extraordinary opportunity. He remains to this date the only Wilmer resident to pass on the chief residency offer. After finishing his fellowship, William had numerous offers for employment including an offer to interview for a chairmanship at one New England department. Alas, William had committed to return home to the Bluegrass.

In returning to Lexington, William decided his career would have a tripartite mission as he had observed at Wilmer and at other leading eye centers elsewhere. He wanted 3 basic things: (1) to teach future eye doctors the skills needed to diagnose and treat retinal conditions (2) the ability to help craft the future of retina through participation in research and (3) to deliver the absolute best patient care. Dr. Wood had been in discussions with the University and a unique argument was agreed: he would be a part time salaried faculty member leading the UK retina service, and at the same time would be allowed to have his own private retina practice. His unwillingness to accept anything less than excellence for his patients led to tremendous demand for his services, and soon William's practice grew to include a five state region. William would often spend countless evenings and weekends performing vision saving retinal procedures. He also spent numerous hours pursing his passion for teaching by training many future ophthalmologists, who started practices throughout the state. It wasn't until Dr. Jack Hollins, a former resident of Dr. Wood's, returned from his fellowship with Dr. Steve Charles in Memphis to take over the faculty position at UK that Dr. Wood had a reprieve from a relentless schedule.

1985 marked a sentinel change in direction for William's practice. He had grown his private practice, at the time named William Wood MD PSC, into a renowned place for the care of retinal diseases. William was still very busy caring for patients but had a vision for more. He wanted to bring world class clinical research to the patients of Kentucky. He also yearned to teach future Vitreoretinal surgeons

how to perfect their craft. This led Dr. Wood to search for the very best young retina specialist in the United States to join his practice. Unfortunately, that specialist did not exist - yet. Dr. Wood reached out to his former mentor and friend, Dr. Ron Michels. At that time, Dr. Michels was the most renowned retina surgeon in the US and was practicing at the number one eye institute in the world - the Wilmer Eye Center. As such, his fellowship was considered the premiere training program in the world. Dr. Michels would select one ophthalmology resident from the entire country to join him for a year of intensive surgical training. When William called Ron, he was disappointed to hear that his current fellows would not live up to Dr. Wood's lofty expectations. However, there was a future fellow who had been selected by Dr. Michels from Oklahoma who fit the bill. His name was Dr. Rick Isernhagen and he not only was the top candidate amongst a field of brilliant eye surgeons but he also was from Oklahoma and unlike most applicants, was not interested in living on either the east or west coast. William immediately called Rick and proposed his vision for a new entity called Retina Associates of Kentucky which would be built on the three core fundamentals William had always pursued: excellence in patient care, training of future surgeons, and participation in ground breaking research. Only this time, William had one additional key element: the assured freedom to spend desired time with one's family or on other personally important interests. The 12 years of solo practice with numerous after hours surgeries had taken it's toll on William. Rick shared the same core values as William, and they agreed easily on ways to share patients, work time, and income. They signed an agreement even before Rick had begun his fellowship.

Just before Rick started his fellowship, William was approached by the directors of the Humana corporation, which was the world's largest hospital corporation in the 1980's. They had started a Humana Hospital in Lexington and they asked William to found and lead a "one of a kind" ophthalmology sub-specialty center of excellence at their new hospital. William agreed but only after securing a commitment from Humana to provide near limitless support to the pursuit of excellence. This included dedicated eye operating rooms with 24/7 dedicated nursing staff for eye surgeries, a promise to purchase the best available surgical equipment as well as provide a budget for bringing thought leaders from around the world to Lexington to educate fellow eye doctors and a dedicated budget for research. They also committed to adding a fifth floor to their medical office building for Retina Associates offices. Dr. Wood hired the best architect in the United States specializing in ophthalmology clinics and offices to design the spaces with

instructions to include significant space for future retina doctors and clinical activities. This state of the art retina clinic in the 10,000 square foot space, 33 years later, still houses the Retina Associates of Kentucky Lexington Office. In return, Dr. Wood promised to recruit every ophthalmology subspecialist in central Kentucky to join and work at this new center; it was called the Center for Advanced Eye Surgery.

The addition of Dr. Rick Isernhagen to the RAK team meant that the practice could now participate in critical pilot studies for innovative surgeries. RAK led the way being one of four practices in the United States to be pilot sites for macular translocation surgeries, submacular surgery studies and the silicone oil studies. Now that RAK had two physicians, they could also participate in valuable National Eve Institute studies. Retina Associates has participated in over 40 different clinical studies including such pivotal trials as the AREDS studies, the CATT study, the DRCR studies, and many more clinical trials. They have been active in investigator sponsored trials looking at treatments for ocular histoplasmosis syndrome which is a leading cause of vision loss in working age people in the Bluegrass.

Rick also helped William in establishing the first Vitreoretinal Fellowship training program in Kentucky. A program that under William and Rick has trained more than 40 retinal surgeons who have taken their training here to save the vision of patients all over the United States.

The addition of Rick also allowed Retina Associates to grow and they began seeing patients in satellite clinics or offices outside of Lexington. Both William and Rick embraced the philosophy of providing the highest quality retinal care to patients throughout eastern Kentucky, even if it meant traveling hours to establish and staff clinics throughout the state.

Since it's inception, Retina Associates of Kentucky has grown to 10 physicians and has served over 100,000 patients. It has been a home to over 500 employees some of whom have dedicated their entire careers to taking care of patients here. Retina Associates has not only witnessed but helped lead the development of new technologies, drugs and surgical techniques that have helped people in and outside of the bluegrass state to see better and live better lives. Looking back at Retina Associates of Kentucky, it doesn't take long to realize that great practices do not happen by accident. The same can be said for it's founder, William Wood he didn't happen by chance or luck. He seeks the best in everything and has always had a vision for a bright future.

By John Kitchens, MD