What We’re Doing Today: Meet Paul Runge, MD

By Alfredo A. Sadun, MD, PhD

Paul Runge, MD, was born in Milwaukee, Wis. and later moved to Southern California. His medical studies were at Flinders University in Adelaide, Australia.

He did his pediatric residency at the Hospital for Sick Children in Toronto and later pediatric training at the University of California, San Diego. This was followed by a fellowship in pediatric ophthalmology at the Hospital for Sick Children in London.

He received further ophthalmology training at the Cook County Hospital in Chicago. Remarkably, another fellowship was in medical retina with John Heckenlively, MD, at UCLA followed by surgical retina with Steve Charles, MD in Memphis, Tenn. Most of his subsequent career was in private retinal practice in Sarasota, Fla.

Most recently, he returned to the Charles Retina Institute in Memphis. However, as the reader will soon learn, he has recently been very active in another capacity.

Paul Runge, MD: Steve Charles is both a mentor and friend. He is an amazing surgeon and great teacher. I was fortunate to be his fellow and stayed on with him for a year after my fellowship before joining a private practice in Florida.

Dr. Sadun: We’re here to learn of what you are doing in Ukraine. Did you have a special connection with that country? Please explain.

Dr. Runge: When I initially decided to volunteer in the Ukraine, I had no prior experiences there or connections. I sent emails to various hospitals and clinics in Lviv, in the far west of Ukraine, and after several initial enthusiastic responses, I was disappointed that no one followed up. Eventually, through a mutual friend, I was connected with an ENT surgeon, Roman Fishchuk, MD, who connected me with the doctors I continue to work with today.

Dr. Sadun: Had you previously traveled to Ukraine or other countries in Eastern Europe?

Dr. Runge: No, I had never been to any country in Eastern Europe. However, I did volunteer work in Magadan, Russia from 1989 to
1996 as part of a medical exchange sponsored by the State of Alaska in association with the Institute of Circumpolar Health. And, as it turned out, my experiences in Magadan helped me understand medicine in the Ukraine. Both regions have inherited the medical system as developed by the former Soviet Union.

**Dr. Sadun:** Something must have inspired going to Ukraine. What was your emotional reaction to Russia’s invasion?

**Dr. Runge:** I identify with the Ukraine’s position and am horrified with what has occurred. I recently visited Hiroshima, Japan, which I believe every person should experience. Robert Oppenheimer is quoted as saying “Now I am become death, the destroyer of worlds,” after the atomic bomb he helped create was completed and later used in the complete destruction of Hiroshima and Nagasaki. We carry the burden Oppenheimer alluded to. We must learn from history.

**Dr. Sadun:** What was your primary concern? What were your considerations of the geopolitics? War in general? Civilian suffering? Specific medical needs?

**Dr. Runge:** I was primarily concerned with what were obvious medical needs. That was something I could address.

**Dr. Sadun:** When did you first go to Ukraine?

**Dr. Runge:** My first trip there was, ironically, Independence Day for us, July 4, 2022.

**Dr. Sadun:** What was your initial emotional as well as intellectual reaction?

**Dr. Runge:** My reaction to what I first observed in southwestern Ukraine related mostly to what I saw as great differences in health-care delivery. My first two visits were to Ivano-Frankivsk National Medical University where I worked primarily in a general ophthalmology clinic as part of a general hospital. Most of the patients I saw were coming in for second opinions. And, for the most part, I agreed with the doctors who had made the initial diagnoses. Ukrainians tend to doctor-shop to a great degree and rarely accept their initial doctor’s opinion. The other thing that struck me is that in Ukraine there is a great deal of homeopathic medicine and other unconventional therapies of little or no proven value.

**Dr. Sadun:** What about the Ukrainian state of mind and reaction to the invasion?

**Dr. Runge:** Ukrainians have a common cause. All they talk about is how the country has pulled together to defeat Russia. They’re not thinking that they’re anything but winning this war.

**Dr. Sadun:** There must have been some frightening moments? Can you relate the worst?

**Dr. Runge:** I’m not sure that I was ever really frightened. I was drafted into the U.S. Army in 1966 and subsequently spent a year in Vietnam in two infantry units. We were often under fire, so perhaps I am less impacted by these situations than most. In fact, another one of my major influencers in life was Sgt. Mears, my drill sergeant in basic training, who always repeated the same mantra, “Pay attention to detail.” His mantra has served me well.

Over the many months that I have been coming to Ivano-Frankivsk, Ukraine, there has been a great increase in the number of air raid sirens which now occur three or more times daily. We generally go into basement bunkers when the sirens occur until we...
receive the all clear. But now that the sirens have become so frequent, people seem to be less affected, and often they do not go into the shelters. My phone has an app that tells me when to go to the shelter and when it is safe to leave. There is a large power plant 20 miles north of our city, and while I was there it was hit by cruise missiles. This got my attention, as I could hear the thud of the incoming missiles.

**Dr. Sadun:** How were you providing help there?

**Dr. Runge:** My first two trips to the Ukraine were spent mainly in a general eye clinic offering second opinions. The clinic consisted of a senior ophthalmologist and two first year residents. I primarily offered second opinions but also spent a great deal of time teaching the residents. At one point, the senior ophthalmologists went to the European Society of Cataract and Refractive Surgeons meeting in Milan and left me in charge of the clinic. I enjoyed teaching the residents, and I believe that they enjoyed the experience as well. On my third visit, my second day back at the general eye clinic, the head ophthalmologist announced that she would leave for Canada the next day. Another resident, stated she was also going to attend a wedding in Odessa. However, later, instead of returning to Ivano-Frankivsk, this resident left for Normandy, France. As a consequence, the need for my services teaching at this clinic diminished greatly. Luckily, I had also been working at the children’s hospital as well and so I shifted my efforts there. I am board certified in both pediatrics and ophthalmology and have a special interest in retinopathy of prematurity (ROP). This children’s hospital is the regional high-risk perinatal center where all treatments for ROP occur. I am now focusing my attention on premature babies but I also consult on eye problems of children and occasionally an adult will seek my advice in this hospital as well.

I managed to obtain a Norlase LION laser from the company in Copenhagen which we now use to treat babies with threshold ROP. We treated the first baby on March 8. Everyone in the OR was amazed and almost euphoric about our ability to address this risk of blindness. Previously they used something similar to an Iridex 810nm laser which was difficult to use at best. I am trying to get them to use anti-VEGF injections as well, and eventually we will do so.

I have also become involved with teaching medical students. The Ivano-Frankivsk National Medical University is a very large institution which was founded in 1953. Medical school in Ukraine lasts six years, and there are 450 students per year. This university also has faculties of dentistry, physiotherapy, and pharmacy. There are many foreign students from India, Africa, and western Europe, and I met one student who is from Stuart, Fla.

While there, I also gave lectures to students and staff on diabetic eye disease, macular degeneration, lasers and ophthalmology and the differential diagnosis of the red eye. I have also given lectures to staff and students on the new Norlase LION. These laser talks also included a demonstration of the laser where each participant was able to use the laser to treat a photo of the retina. These demonstrations were amazing. To watch the expressions on the faces of all those who were able to use the Norlase LION was incredible. Nearly 150 individuals had the opportunity to try the laser, and many more are planned.
**Dr. Sadun:** How did your perspective as an ophthalmologist influence your thoughts and actions there?

**Dr. Runge:** Throughout my career I have always been involved in teaching. I believe that it is our most important role as physicians. Whether the teaching be to medical students, doctors in training, our patients or our colleagues, teaching is the most significant of all of our roles. I do feel strongly that we have an obligation to pass our knowledge on to the next generation and to do the best job possible of educating our patients. I now feel that I am achieving these goals.

**Dr. Sadun:** Did this change you as a person?

**Dr. Runge:** Sure. Everything we do in life changes us. I expect that I am a different human being for this experience in Ukraine. Our experiences mold us and hopefully help us improve ourselves, our relationships and how we view the world. I have always maintained that we should all try to leave the world a better place for all those who follow. I hope that my efforts helped achieve this goal.

**Dr. Sadun:** What further plans do you have there?

**Dr. Runge:** When I first came to Ukraine, I did not know what to expect and everyday there I learn something new. I have achieved more than I imagined was possible over a relatively brief period. There is still much more to do. One thing I have begun to work on is developing an app to track all of the high-risk premature babies in our hospital (to prevent any baby from going blind from ROP), which I hope to expand to the region and eventually entire country. This app could evolve into an open-source electronic medical record which would be distributed free to anyone interested in using it.

Ukraine has many bright programmers and if this talent pool is brought to bear on this problem the outcome will help us all. Currently, patients bring their medical records with them to their clinic visits. These booklets contain all of the patient’s medical information. The doctors write their progress notes into these booklets and patients have the only copy. This is the same system I experienced in Magadan, Russia years earlier. If this notebook is lost, then the patient’s medical record is lost with it. We can do better.

One other issue is obtaining additional medical equipment. Several companies and individuals have donated medical and educational materials and equipment. I thank Norlase, Volk, Goodlite, several of my retired colleagues and the Academy to mention a few. We need at least one good slit lamp for the pediatric eye clinic and one of the ophthalmologists there has requested a refractometer.

**Dr. Sadun:** You are a seasoned ophthalmologist who brought many specialty skills as well as perspective to Ukraine, where your teaching and help must have been both critically useful and inspiring. Thank you. Anything more you wanted to say?

**Dr. Runge:** Ukrainians are very bright, very motivated and well intentioned and would certainly benefit from training in North America. Ukraine produces many more physicians than it can support. So, I’m thinking that Ukraine may be a source of physicians, trainees and trained physicians to help fill the gap for America’s unmet health care needs. I’d like to put this out there as a reader may have some ideas as to what is possible.
Grading on a Curve

By Alfredo A. Sadun, MD, PhD

This editorial will have a few swerves (unexpected curves) in it. I begin by addressing one of the elephants in the room of senior ophthalmologists (SOs).

Whether we are an ophthalmologist with a busy private practice, an academic ophthalmologist deeply immersed in scholarly activities, or someone retired or contemplating retirement, the question that sometimes creeps into our mind goes something like this: “Have I had a successful career and life?” We are at an age when we take stock.

The British poet Rudyard Kipling says we are successes when “you can keep your head when all about you are losing theirs” which is very romantic but not a reliable score card. American essayist Ralph Waldo Emerson recommends measuring our life by the thought that: Success consists of “winning the respect of intelligent people and the affection of children.” I always liked that. Respect from those who are wise and understand and love from those who know you best, seems a fine aspiration. But as a scientist, I usually seek a more quantitative approach and one with some measures of objectivity.

Let me begin by saying each of us has had different professional aspirations. Some will have committed themselves to building extensive practices. Others for having tended to the most patients or those most seriously affected with vision-threatening diseases. Some have done this with missions to international ports of call where medical expertise is less available. Some of us have attempted to mentor and nurture the careers of others. Some of us have amassed minor fortunes. Others have sought to make new knowledge and to spread this information through publications or teaching.

So, imagine a curve with the X axis as time and the Y axis as accomplishment of one or another of these objectives. The Y axis might be patients seen, dollars made or offices created. But in this case, I lifted a curve straight out of Pubmed and it lists by year peer-review publications. Obviously, some papers were less important than others, but let’s skip the details and consider the nature of such a curve.

This curve, at face value, points out the most productive years and even suggests trends. My quantity of publication output varied a bit (and even reveals some years of increased effort corresponding to my attempts to pump up the dossier just before each promotion). But the trend until 2020 was up. This probably reflects less talent and effort and more that collaborations have increased the efficiency of my efforts. And now, in 2023, the curve is heading down. Any curve of accomplishments will eventually decline (with exceptions such as passive income but that’s wealth, not accomplishment). We slow down. We get old. We retire. For some, this may be discouraging. But I take a different view as this further analysis suggests.

I have asked some of my mentors what were their good years; their glory years; their golden years. By this, I meant the years that made them happiest that validated their professional efforts the most. Invariably, and without differences for what type of accomplishment they were going for, the golden years were those of maximal growth. Stephen Ryan, MD, who built the Doheny Eye Institute, was clear that the first years of the department, when it grew from two to eight faculty members, was the most exciting and fulfilling period. When he got to over 30 faculty members and was directing a well-oiled machine that was well-funded and secure, he was proud, but not as excited. My colleagues in science often described their first grant and their first cluster of publications as the golden years. What they are all alluding to was the period of time when their Delta, positive change over time, was greatest.

Let’s reexamine the curve in figure 1. The orange arrows are pointing to years 1984, 1990 and 2008, corresponding to such periods. The bumps are small, but a mathematician would describe these as when the derivative of the original curve was most positive. The curves are arcing up.

![Figure 1. Pubmed analysis of peer reviewed papers published per year. Orange arrows correspond to positive Deltas, green arrows are Deltas that have a negative derivative. The derivative of the curve shows these as positive values. Psychologists tell us that brief periods of happiness are most correlated with these.](image-url)
From the Editor’s Desk

And indeed, psychologists and philosophers have long known that gaining new ground, a positive Delta, is more likely to provide happiness than having more. There is even a term for it: hedonic adaptation.

Sanjiv Chopra, MBBS, MACP, at Harvard Medical School, tells us that people who win lotteries get happier, but only for a short while. Then the positive Delta either flattens out, or more likely, pitches back into a negative Delta. That is, what goes up, must come down. And that’s when it hurts. Despite still being rich, Chopra’s studies show that lottery winners are NOT happier a year after their numbers came in.

Buddhist philosophy addresses this a lot. It contends that pursuing anything external is fruitless. Sadness, misery and a life of discontent are the only possible consequence of successes along the way. Look at figure 1 again and look at the green arrows at years 1997 and 2022. Buddha advocated the renouncement of all gains, not just material ones. A family, with a loving wife and happy children, produces attachments and when, inevitably, things go wrong with these attachments, then pain and sadness follow. The positive derivatives must be followed by negative derivatives. Buddha understood hedonic adaptation. That much is true. But I can’t ascribe to a life of non-commitment. There is value in things and ideas, and personal relationships are too beautiful to miss out on even if they give me attachment. So, I guess I can’t be a good Buddhist. But I don’t have to be.

There remains another mathematical trick that we might consider using. And we are at that stage in life when such a trick reveals the deeper truth that we need. When we are young, then the direct measurement of our objective is most worthwhile. Keeping score keeps us on the right track. In mid-life, it’s more appropriate to often look at the derivative of the curve and smell the flowers of our positive derivatives. As well, we should appreciate that the unhappiness we might feel when we suffer a business setback, a health challenge or a minor failure, is appropriate but temporary and just require patience and resolve. We look further to the future and reassure ourselves that a positive Delta is around the corner.

But, at the end of our careers, positive Deltas are harder to come by. And some people see this as a very gloomy thing. I think that’s wrong. So, I quote the greatest scientist of our century. Albert Einstein redefined physics. He made, arguably, the three greatest discoveries of the 20th century. He showed a deep understanding of the universe and for this received an astounding acclaim by his peers, the collection of amazing Nobel Laureates in physics who came to Einstein whenever they discovered something important to get his approval and validation. They certainly qualified as Emerson’s intelligent friends. On the side of love of family, Einstein was not so fortunate. But he had friends whom he loved and who loved him. His closest friend was Michele Besso, a mathematician who had even helped Einstein with some math problems early in Einstein’s career. In 1955, at 81, Besso died. Einstein wrote this letter to Besso’s sister.

“Now he has again preceded me a little in parting from this strange world. This has no importance. For people like us who believe in physics, the separation between past, present and future has only the importance of an admittedly tenuous illusion,” Einstein wrote. Einstein died almost exactly one month after his friend on April 18, 1955.

What did Einstein mean? For the most part, Einstein was alluding to time. Some physicists have thought that Einstein was alluding to the relativistic logic of time dilation, etc. But Besso’s sister wasn’t interested in that and the context was that Einstein was writing a letter of condolences and was being sensitive to her needs. I think Einstein was alluding to the idea that time has too much meaning to us humans who are enslaved to time as we go about our business; that time dominates our views of whether we are happy or sad based on recent gains and losses; that in this case, time makes us aware of what was and is no longer which drives the feelings of loss and grief. It is very human to worry about change for that evolved as a survival selection advantage. But, I think that what Einstein was telling us was that we should sometimes look at things without accounting for the pressing issue of time. He might have added, as he often did, that you can generate the future from the past so emphasizing the dividing line of past from future isn’t necessary.

So seen this way, the accomplishments of his great friend, Besso, and Besso’s life, including his beautiful relationships, stand on their own; that these things, if not eternal, at least are not ephemeral either. Einstein was telling Besso’s sister to take the integral of her life with Besso. Einstein was dying (from a bleeding abdominal aneurysm) and probably wrote this letter while taking the integral of the curve of his life as well.

Now we can reexamine the curve of our lives and concentrate not only on the highs and lows, and not even on the many Deltas that brought us moments of joy and anguish. We can now look at the integral under the curve, and thus the totality of it. If we have lived well, we will have left our mark: On the patients we’ve seen and whom we alleviated some anxiety over their vision. On the colleagues we’ve encouraged and mentored. On our body of scholarly work that hopefully shapes the future understanding and discoveries in our fields. On our students, formal and informally taught. On our spouses and children and grandchildren who shared with us rich, emotional lives. In these and in many other ways, we are very fortunate if we’ve left footprints in the sands of time.

So, in fact, our lives are graded on a curve. And whether we fixate on the standard curve, the derivative of that curve or the integral, makes all the difference.
For more than a decade we have experienced external influences on clinical medical practice with the intended goal of improving the quality and efficiency of care.

These changes have been foisted upon us, in large measure, by governmental agencies and insurance companies. And while we can question whether the goal of better healthcare has been achieved by any of these actions there is little question that they have become an imposition on our lives, have created emotional stress and have altered the traditional physician-patient relationship.

The COVID-19 pandemic severely altered clinical practice patterns, influenced employment relationships and negatively impacted the outlook of many physicians with respect to the long-term prospects of medical practice. We now face additional challenges. Among the issues we are encountering are aging of both the patient and physician populations; physician burnout; the projected deficit in the physician workforce; mandated physician retirement and physician self-regulation.

Currently, 43% of the Academy’s membership is 60 years of age and older, which is an increase of 10% from the survey performed a decade earlier. This trend parallels the aging physician population in general. Projected estimates over the next 15 years are that two of every five physicians will be 65 years old or more. At the same time the senior patient population age is also destined to increase by 42% for those over 65, while the proportion of those over 75 is anticipated to grow by 74%. Although we need a viable workforce to provide the requisite health care to an aging society, many physicians intend to retire, some of whom are still mid-career, largely related to physician burnout.

A multitude of factors have contributed to physician burnout. An article in Forbes cited “long-term, job-related stress” as the overriding cause of physician burnout. The Medscape survey cited in the Forbes article ranked ophthalmology at a 40% burnout rate, which was somewhere in the middle of the pack. The drivers of physician dissatisfaction and burnout are endemic, but the practice imperatives of some specialties make them more likely to experience the stresses of the current health care delivery environment. The drivers of physician burnout include emotional exhaustion from excessive workloads, the inability to spend adequate time with each patient, administrative tasks and clerical burdens often associated with the electronic health record entries required for billing purposes. Using scribes to enter clinical data has addressed one of the pressing issues, but the pressures of patient volumes, obtaining prior authorization and the demanding pace of practice continues to take its toll. Physicians simply desire the opportunity to care for their patients without external interference as had existed when physicians had fewer regulatory demands and enjoyed a greater degree of autonomy.

In a recent guest essay in The New York Times, Sandeep Jauhar, MD, questioned whether we would choose to be cared for by a 100-year-old physician. The article poses the ethical quandary surrounding the cognitive and physical decline of aging physicians and their ability to function competently. It further pits an individual physician’s decision to continue in medical practice against the societal need for patient safety and raises the question of chronological age versus functional age with respect to the ability to safely continue clinical practice.

Although there are mandated age requirements for some professions, there is no such mandate for physicians. Because of the variability in functional performance associated with aging, mandated retirement does not seem justified. But as a profession we have an ethical and societal obligation to ensure that the health care we render satisfies the standards of safe, effective and efficient practices. Dr. Jauhar proposes that periodic competency assessments be performed after a certain age, perhaps 65 or 70 years old. This concept is not novel or original. It has been proposed by several surgical organizations and more recently by the American Medical Associa-
The Aging Physician

But as might be anticipated, any proposal advocating compulsory testing has encountered resistance and legal push-back specifically related to ageism.

An approach that recognizes the sensitivities of aging physicians while preserving their societal and ethical obligations should be accepted as a basic tenet of a periodic assessment initiative. Other surgical groups have advocated for an active program to educate physicians about preparedness for the eventual decline in physical and cognitive performance, as well as, of their duty to self-regulate. Physicians are reluctant to plan for retirement for a variety of reasons. Lack of self-esteem and resistance to change are important factors in the perception of becoming a lesser physician.

Rather than being an impediment, periodic assessment of neurophysiological performance preserves the dignity of the individual by encouraging participation in a modified clinical practice model while respecting the realities of an altered physical and cognitive status. The Academy has previously addressed transitioning out of practice and will continue to serve as a resource in the future.

A more sensitive issue is the lack of physician self-regulation. By the nature of our educational process, we have evolved a culture of deferential treatment of our mentors. This often produces a hesitancy to report the functional decline of a senior colleague. As individual physicians we generally fail to recognize our own deficiencies and only become aware of our waning skills with the occurrence of poor clinical outcomes.

In addition, although physicians understand an ethical responsibility to report a colleague whose performance is suspect because of aging, there is often a reluctance to become involved. In each of these instances, a periodic assessment model that tests objective neuro-physical and cognitive measures could obviate the pervasive arbitrary reporting status. It is reasonable to consider the initiation of testing even earlier than has been proposed. A decline in test results from a baseline value, derived when the expectation for an ophthalmologist’s performance has not been influenced by increasing age, could alert the physician to the benefit of considering a transitioning of professional activities.

Self-regulation also reinforces the concept of variability — that there are members of the medical community who can effectively function far beyond what their chronological age might suggest. Metrics generated by valid assessment instruments can guide our planning strategies for the healthcare workforce of the future. And it is in our best interest to be active participants in determining how a testing program is developed and how it will be administered.

The Academy has a tradition of creating opportunities from challenges. Each of the issues that has been cited requires an objective examination and a frank discussion so that the development of recommendations is on a firm footing. We, as a profession, are obligated to provide an open forum to educate our members and to actively engage in a conversation about the emerging issues that will potentially affect all active practitioners. We encourage all attendees at AAO 2023 in San Francisco to join us for the symposium titled “Professional Longevity.” It is in our best interest to become enlightened managers of our professional lives.

(SYM56) Professional Longevity: What are the Essential Elements in Our Approach to this Emerging Challenge?

Mon. Nov. 6
8:00am to 9:15am PST
CHAIRS: Samuel Masket, MD and Stephen Obstbaum, MD
PRESENTATIONS BY: George Bartley, MD; Tamara Fountain, MD; John Irvine, MD; Paul Lee, MD; Flora Lum, MD; and Alfredo Sadun, MD, PhD
Since its initiation in 2014, the Academy’s Artemis Award has been presented annually to one Young Ophthalmologist (YO) Academy member who has demonstrated compassionate care and service so exemplary as to be beyond any level of expectation.

The activities may be domestic or international. Selecting such an individual brings great pleasure to the members of the Academy’s Senior Ophthalmologist (SO) Committee who are charged with reviewing the nominations submitted by academic program directors, department chairs, and subspecialty/specialized interest, state and international societies. During the SO Committee retreat, typically held in late winter, the nominees and their activities are discussed openly by the SO Committee members, after which ballots are taken until an award recipient is selected.

On one hand, it is remarkably uplifting and enlightening (if not daunting) to review the activities of our junior colleagues who seemingly have satisfied a lifetime of giving in a very short time span. On the other hand, it can be very difficult to select only one candidate as the awardee.

Typically, we look for activities that are innovative, reach a large number of needy individuals, are reproducible and can be carried on with perpetuity once the candidate has moved further on in their training or professional life. Subsequently, the candidate must be approved by the Academy Awards Committee and the Board of Trustees and the recipient then announced. For us, it is a great honor to recognize the contributions of the award recipient. Few things can equal the pleasure of informing the nominee and nominator of his/her selection.

The mythological greek goddess Artemis had many attributes. Among them, she was the protector of the vulnerable and suffering, hence the award is given in her name. Interestingly, she was the (older) twin sister of Apollo and the daughter of Zeus and Leto. As lore has it, after Artemis was delivered with ease, Leto’s labor continued with great difficulty and Artemis aided her brother’s delivery as a midwife. Given that, she became known as a healer, nurturer and protector.

As we are about to recognize our 10th Artemis recipient, we thought that it would be interesting to have a look back at the awardees to see how recognition of their contributions impacted their professional lives, what became of the projects that they initiated and what they are currently doing both personally and professionally. For this issue we contacted John Cropsey, MD, the first recipient in 2014 and Wendy Hofman, MD, the 2015 awardee.

JOHN CROPSEY, MD

Taking advantage of WhatsApp, I had the opportunity to speak live with Dr. Cropsey at his home in Rwanda.

John was literally born into international medicine. His father, a U.S.-trained general surgeon native to rural Michigan, moved to Togo in West Africa as a young professional with his wife and four children in tow to establish surgical care for a greatly underserved populous. John was just 2 years old when he left the U.S. and flourished in that environment. However, as a teen he returned to the U.S. when his mother needed specialty care for an acquired tropical disease. He was subsequently educated at the University of Michigan for undergraduate and medical school studies.

Given his observations in Africa and learning from his father’s own need to learn rudimentary eye surgery, combined with a vast need for eye care in Africa, John went on to Wills Eye for residency, finishing his training in 2009. Just as his parents did, John, his wife Jessica, and two children (they now have three) emigrated to...
Africa, settling in Western Kenya where he joined a small number of ophthalmologists in providing desperately needed eye surgery for their underserved rural area.

During his two years at Tenwek Eye Unit, the team provided surgery for more than 4 thousand patients. Along with Ben Roberts, MD, and Sadeer Hannush, MD, he helped establish the first corneal transplant program in Western Kenya. Seizing an opportunity to teach more physicians, technicians and ophthalmologists, John moved to neighboring Burundi in 2013 where he joined the staff of the Hope Africa University’s School of Medicine, training young physicians as he helped establish their first eye department. He remained there until 2021 when the opportunity presented to join John Nkurikiye, MD, and Ciku Mathenge, MD, and their newly founded residency training program at the Rwanda International Institute of Ophthalmology (RIIO) in Kigali.

Once again, John packed his family and belongings and began a new challenge. Now, at a 4-year-old training program which just graduated its first class in 2022, he and others are training 10 residents from all over East Africa and making a huge impact. Besides teaching, John leads a remarkably full professional life, performing, manual small incision cataract surgery (MSICS), phaco, corneal transplant, glaucoma, posterior segment, pediatric and oculoplastic surgeries.

It was interesting to learn of the medical challenges that he routinely faces in Rwanda. As John explained, owing to the lush environment, there is a marked incidence of allergy induced limbal vernal conjunctivitis among youngsters; unfortunately, this leads commonly to eye rubbing, and as he described it, a near epidemic of keratoconus. RIIO has helped to establish programs for distribution of topical cromolyn sodium, which is readily available, inexpensive and very effective for early cases. Unfortunately, more advanced cases require use of topical steroids and other steroid sparing agents that are more costly and less widely available. While already offering corneal transplantation, RIIO will soon offer contact scleral lenses and cross-linking.

I also asked about the political and social challenges that he confronts. Among the issues is the residue of colonialism which stoked decades of ethnic strife post-independence, eventually leading to the 1994 genocide against the Tutsi. The scars from the era remain deep, but with vision and perseverance, Rwanda is building a bright future for her people.

So, how does all of this actually work financially? Partnering with many generous individuals, churches and other organizations, John and Jessica raise all the funds for their own employment and many other eye care initiatives in Rwanda, Burundi and Eastern Congo. They do this...
through SERGE Global, a non-profit (501(c)3) international Christian mission, which is home to the Eye Love Africa Project and the Kibuye Retinoblastoma Treatment Center. In Rwanda, RIIO’s primary training site is at the government district hospital at Kibagabaga.

Thankfully, the great bulk of the populous has government-funded, low-cost insurance that covers the majority of the facility cost and procedures. Some ophthalmic industries donate products, and quality polymethylmethacrylate (PMMA) intraocular lenses (IOLs) that work well with MSICS and can be obtained inexpensively, from Aurolab, a subsidiary of the Aravind Eye Care System. John also explained that he receives donated corneal tissue from several international corneal banks. He also has had help from private foundations and singled out the David and Molly Pyott Foundation as being particularly helpful in supporting many programs and trainees in the region over the years. The Pyott's are the Orbital Honorees for AAO 2023.

I asked John about his family and living conditions. His wife, Jessica, and other volunteers are certified teachers and established a school during their time in Burundi to educate their young children at the time. However, his eldest two children, Elise, 16, and Micah, 14, are now at a boarding school in Kenya while Sam, 11, is in school at home in Kigali, Rwanda. Their home is in a tropical paradise, surrounded with rich green foliage and temperatures typically in the high 70s to low 80s given their elevation of 5,000 feet on the equator.

John is very satisfied with his professional life and doesn’t see a major change on the horizon. However, he does return to the U.S. about one to five years to maintain and update his skills and to raise funds for their work in Africa. When here, he is very pleased to work part time at the University of Michigan Kellogg Eye Center. He has no illusion, however, that living in central Africa requires ongoing, significant sacrifices from all family members. He readily acknowledges that “it takes a village” to fulfill their family’s mission to train, mentor and equip African eye care providers.

John remains greatly appreciative of being the inaugural recipient of the Academy’s Artemis award. When queried how it impacted him, he indicated that it opened many doors and enabled him to make contacts with and get support from industry and granting organizations. To further cement and expand those relationships, when possible, John attends the Academy’s annual meeting. It is very apparent that John was and remains an excellent candidate for and a deserving recipient of the Artemis Award.

WENDY HOFMAN, MD

I spoke with Wendy Hofman, MD during her recent visit to the U.S. In 2015, Wendy was the second recipient of the Academy’s Artemis Award.

I had the great pleasure to chat with her about her professional life and commitment to her mission in Gabon. It was quite evident that much of her support and dedication stems from her strong Christian faith.

Wendy developed a keen sense of volunteerism for underserved regions while in high school, spending a summer in Ecuador with the Amigos de las Américas program, helping locals learn about dental hygiene. (Serendipitously, one of my sons did exactly the same mission in the 1990s.) In subsequent summers in college, she served in a student exchange program in China, a Bible translation interchange with Wycliffe in Peru, and health missions in Honduras through the Christian Medical and Dental Association.

Native to the Seattle area, Wendy attended medical school at the University of Washington and then had her ophthalmology residency at the University of Minnesota. The Minnesota Academy of Ophthalmology nominated her for the Artemis Award. Once her training was completed, Wendy became affiliated with Samaritan’s Purse, a Christian humanitarian aid organization and opted to plan for her professional future in Gabon on the west coast.
of central Africa. Before establishing life there, however, she and her husband took an intense and immersive course in conversational French, and then did a three-month fellowship in MSICS on the Africa Mercy ship on the coast of Benin; she describes the program as “Orbis with a boat,” referring to the international nongovernmental agency (NGO) that promotes eye health.

Ultimately, she and her husband, Eric, an actuary by training, settled at Bongolo Hospital in rural Gabon, more than 350 miles from the capital city of Libreville; the hospital is maintained, and Wendy is salaried by the Christian & Missionary Alliance. She was the first ophthalmologist at Bongolo and now trains a single resident over a four-year period.

For a new Eye Clinic at Bongolo hospital, opened in 2020, she obtained a $600,000 grant from the United States Agency for International Development (USAID), $300,000 from the government of Gabon and $100,000 raised from private sources! She has been elevated to medical director for the entire hospital. Although she trains a resident, there is no accreditation for the program as there are no other ophthalmology residencies in the country; she is hopeful that the government-run medical school will co-sponsor accreditation with her program.

With her resident and her Congolese colleague (a former resident), they see about 6000 patients and perform roughly 500 surgeries per year. The great majority of cataract procedures are done by MSICS. The program performs about 75% of annual cataract surgeries in Gabon, she estimates. She is comprehensive by necessity, performing a wide variety of glaucoma, plastic, strabismus, and some posterior segment procedures. However, corneal donor material is generally not available, and she has had poor outcomes in a small number of penetrating keratoplasties resulting from limited compliance and poor follow up care. She is hopeful of expanding the care model for posterior segment disease in the foreseeable future and ultimately hopes to establish corneal banking, although she indicates that acceptance of human donor material may be problematic in her region due to cultural beliefs.

Among other challenges is the absence of ocular surface microbiology and lack of CT scanner, as well as unstable electricity. But she remains quite optimistic for the future as she will be joined by another U.S. ophthalmologist in 2024. She also gets great satisfaction from having outreach programs in local villages and having the opportunity to eliminate bilateral blindness with cataract surgery for some of the villagers.

Although Gabon is an oil-rich member of OPEC, wealth doesn’t appear to trickle far down. However, the great majority of the population has government sponsored health care insurance that pays the hospital $40 per cataract surgery, leaving the patient to pay $160. These prices are a tenth of the cost for cataract surgery in the capital city, and no patients are turned away at Bongolo for lack of funds. She is able to keep surgical disposable costs low by purchasing from Aurolab, an Aravind Eye Care System subsidiary. She also gets some support from African Mission Healthcare (an NGO), the U.S.-based Christian Ophthalmology Society, and some Industry.

I queried Wendy about her living conditions and her family. She now has 3 children between the ages of 8 and 12 and who were initially home schooled, but now a certified teacher has been provided by the Christian & Missionary Alliance. Along with her husband, who has become the chief accountant for the hospital, she and her children live in a modest but comfortable brick house, albeit without air conditioning. The region is lush and tropical, with high humidity, and malaria is endemic. As a result, she is maintained on low dose doxycycline for prophylaxis. TB, HIV, and microfilaria rates are also high in Gabon. Given her very rural setting, she and her family return to the U.S. annually for about two months, during which they visit family, take care of personal medical needs, visit supporters, etc.

It is very evident that Wendy was a perfect candidate for the Artemis Award, and she feels that the recognition that she received helped greatly in knowing that she wasn’t all alone in her efforts to restore vision in a remote region.
Finding San Francisco’s Female Medical Past
By Aubrey Minshew, MA

This summer, the Truhlsen-Marmor Museum of the Eye® reflects on the long history of women in ophthalmology and American medicine.

The history of women in ophthalmology takes us across the U.S., and even into Europe, but imagine our delight to find that there was a part of this history centered in the museum’s hometown of San Francisco.

Elizabeth Sargent, MD (1857-1900), was born in California and had a remarkable family. Her father, Aaron A. Sargent, was a member of the U.S. Senate and the House of Representatives. He was also the American ambassador to Germany. Her mother, Ellen C. Sargent, ran in the preeminent woman’s suffrage circles of the day, hosting Susan B. Anthony and Dr. Anna Howard Shaw in the family’s home in San Francisco.

Dr. Sargent attended Howard University Medical College beginning in 1876, only four years after Howard graduated its first female physician. Medical specialty programs in America did not accept women, but women of means could pursue a world-class ophthalmic education at the University of Zurich in Switzerland, which had begun accepting women a decade earlier.

After pursuing her studies at the University of Zurich, Dr. Sargent joined her family, now living in San Francisco, becoming the second woman to practice ophthalmology in the U.S. She practiced at a female-run clinic called the Pacific Dispensary for Women and Children.

This clinic was initially a mystery. It no longer exists today, and we couldn’t help but ask: Where was this hospital? And what happened to it?

After some research, we can finally place the Pacific Dispensary on the map. In 1922, in a “profusely illustrated” book about “Who’s Who Among the Women of California,” there is a small vignette about the female boards of directors that mentions a hospital run “by and for woman physicians” in San Francisco. As it turns out, the Pacific Dispensary was part of a wave of hospitals opened by female physicians across the entire country. Further reading revealed that the Pacific Dispensary opened its doors in 1875 at 520 Taylor St. in San Francisco, very close to Union Square. That location was short-lived, and the hospital was relocated to 3700 California St., still in San Francisco, in 1885.

After the move, the Pacific Dispensary reincorporated as the Hospital for Children and Training School for Nurses. The building was grievously damaged by the San Francisco earthquake and fire of 1906, but a new building for the hospital on the same site was completed in 1911. In the early 20th century, the hospital continued to serve specifically women and children, and it became an important center for the treatment of infantile paralysis, or polio, through the
1940s. In fact, the hospital was the first location in the western U.S. to have a Drinker respirator (or “iron lung”) installed.

During this time, male medical students and doctors were slowly incorporated into this originally all-female institution, and the hospital removed all its restrictions on admitting male patients in 1955. By now, what was originally the small Pacific Dispensary for Women and Children had grown into the well-known Children’s Hospital of San Francisco, which provided health care to generations of San Franciscans until 1991, when it became a part of the Sutter Health System.

Today, the 3700 California St. hospital building still provides specialty care for children, continuing to serve the original mission of forward-thinking female physicians like Dr. Sargent.

To learn more about the history of women in ophthalmology, check out the online “Remarkable Women” exhibit.
A Legacy of Leadership, Civic Responsibility and Ophthalmology: Arkansas’ Henry Family

By Laurie Gray Barber, MD

Many ophthalmology families claim legacy status. But Arkansas holds bragging rights to a family of eye, ear, nose, and throat (EENT) specialists/ophthalmologists that extend back to one of the nation’s early couples: Drs. Murphey and Louise McCammon Henry.

Arkansas continues to reap the benefits of this family of strong leaders, physicians, and ophthalmologists, with a few lawyers added to the stellar mix.

Dr. Murphey Henry was born in 1900 in Mississippi, the son of a general practice physician. He graduated from Washington and Lee University in 1921 and was drafted into the U.S. Army in World War I. Following the war, he attended the University of Tennessee College of Medicine, where he met his lifelong love, Louise McCammon.

Louise was known as a strong woman, when women made up fewer than 5% of all practicing physicians in the U.S., according to “The Fight for Women Doctors, Jeff Nilsson and Maude Radford Warren,” published in The Saturday Evening Post, Jan. 14, 2016. She graduated from Oglethorpe College of Atlanta. The couple graduated from University of Tennessee College of Medicine in 1928, chose internships in St. Louis and were secretly married.

At the time, Louise was the first woman intern at Deaconess Hospital in St. Louis. Murphey was offered an ophthalmology residency at Wills Eye Hospital, but it was revoked when the marriage was disclosed. In those times, Wills residents were expected to be single and to devote their lives and souls to residency. So, the couple found an ophthalmology residency with the EENT hospital in Washington, D.C. Louise was allowed to become a pediatric resident at the D.C. Children’s Hospital, since women were not accepted to ophthalmology residencies at the time.

Murphey did ocular surgery early in the morning, but his co-resident wasn’t waking up to assist. Louise, turning the other’s somnolence to her advantage, would scrub in and assist her husband before her pediatric duties began. She also would join him at the EENT hospital while rounding, constantly absorbing knowledge and skills.

When the Great Depression hit, they found themselves both operating on mastoids, tonsils and performing aphakic cataract surgeries for the people of Fort Smith, Ark. Murphey was in the National Guard and a flight surgeon for the Air Force when World War II hit. He was activated and sent to bases in Laurel, Miss. and Fort Sill, Okla.

For three years, Louise labored to keep their full-time practice open in Fort Smith. Civilians needed doctors, and many male physicians had been activated. The couple had two young sons, and each parent kept one child during this time of separation.

Following the war’s end, the national ophthalmology board began administering exams. Crediting her husband’s teaching, and after many years of hands-on experience in EENT, Louise passed the American Board of Ophthalmology in 1956. Murphey passed the board in 1957.

In 1931, their son, Morriss, was born into this two-physician family. He attended Hendrix College and the University of Tennessee College of Medicine in 1955. He completed
his residency in ophthalmology at Massachusetts Eye and Ear at Harvard Medical School 1956-1959, followed by serving as a captain in the U.S. Air Force and chief of Bitburg Eye Clinic in Germany from 1959 to 1961. During his time with the Air Force, he attended state-of-the-art meetings to learn more about a new Xenon laser being used successfully for diabetic retinopathy, as well as early intraocular implants following cataract surgery.

MEETING ALICE WALKER

One of Dr. Morriss Henry’s most memorable patients was a Georgia sharecropper’s daughter who had suffered an ocular injury from a BB gun as a child. This child, Alice Walker, was physically and mentally impacted the rest of her youth by a blind, “ugly” and painful eye. Her family raised $250 to visit a “real” doctor, who did nothing but hand her a bottle of drops and permanently haunt her by proclaiming, “Eyes are sympathetic. If one is blind, the other will likely become blind too.”

Once thought a cute, outgoing girl, Walker was bullied and teased and became depressed and withdrawn, even suicidal. Fortunately, an older brother coaxed his sister into going to Boston about six years later, after he discovered the Massachusetts Eye and Ear Infirmary. A biography of Alice Walker — yes, that Alice Walker of literary renown — describes what occurred.

“At 9:20 a.m. on Aug. 6, 1958, Dr. Morriss Henry, an unassuming, Arkansas-reared ophthalmologist, performed an extracapsular cataract extraction on Alice’s right eye.”

Morriss removed the white “glob” from Walker’s traumatized eye, allowing the 14-year-old to once again “raise her head” and to become “beautiful, whole and free.”

Walker’s biographer, Evelyn C. White, spoke to Dr. Henry many years later: “These days, Morriss Henry can be found in his sunny, plant-filled office in Fayetteville, Arkansas. A courtly, soft-spoken man, Dr. Henry (also a lawyer who has served the Arkansas State Senate) is lauded throughout the region for his first-rate surgical skills.”

Morriss recalled that Walker had aspirations of becoming a writer. Decades later, Alice Walker’s novel “The Color Purple,” would win a Pulitzer Prize for literature, making her the first Black woman to win the prize. She also became an activist promoting Black women’s art and politics.

After establishing an ophthalmology practice in Fayetteville, Ark. in 1961, Morriss determined that the people of Arkansas should be provided Xenon laser treatment. He married Ann Rainwater in 1964, but their honeymoon was cut short when he found the Xenon laser had arrived. Morriss provided laser care to patients across the state until new lasers were developed with less retinal scarring.

Dr. Morriss Henry also attended law school at the University of Arkansas part-time early in his practice years. Following their
marriage, Ann agreed that they would both attend the University of Arkansas law school part-time while raising their three small children born 1965, 1966 and 1969. Morriss and Ann graduated with law degrees in 1971.

Outside of medicine, advocacy has also proven a strong suit for the Henry family. Morriss Henry was elected county coroner in 1964, then was elected as an Arkansas state representative in 1966 and 1968. He ran and won Arkansas State Senator in 1970 and served as an Arkansas senator until 1984.

By the time Morriss retired from the senate, he had served under Govs. Winthrop Rockefeller, Dale Bumpers, David Pryor, Bill Clinton, Frank White and Bill Clinton again in his second term. He served as president of the Arkansas Medical Society in 1983.

Morriss was also instrumental in the state’s purchase of 12,000 acres of prime wooded parklands in Northwest Arkansas which has become the beautiful, natural Hobb’s State Park. During his senate career, he sponsored and passed bills creating the Emergency Medical Services, expanding Arkansas Education Television Network for Northwest Arkansas, creating area health education centers and helped create the Arkansas State Medical Examiner’s Office. He and Ann gave to the University of Arkansas for Medical Sciences (UAMS) annually.

Morriss, along with department chair, John P. Shock, MD, secured commitments of over $6.5 million to establish the Harvey and Bernice Jones Eye Institute in Little Rock, Ark., the only ophthalmology training program in the state. He also began conversations to help transform the Washington Regional Medical Center campus to a new academic home for UAMS Northwest.

Ann Henry taught business law at the University of Arkansas for 23 years, became the associate dean of the Walton College of Business and was also elected chair of the campus faculty. She has served on many local and state boards, with many city and state improvements due to her skills and leadership, including an amazing new Fayetteville Public Library. Many of the power couple’s activities were done with their three children in tow, as they modeled leadership and civic responsibility.

In order to keep the Fayetteville clinic open while Morriss was in legislative session, Morriss’ par-
ents took turns taking the train from Fort Smith to Fayetteville to help keep his practice open, alternating to cover their Fort Smith clinic. They provided care to railroad workers and were able to ride the trains free. They performed aphakic cataract surgery and knew how to precisely fit hard contact lenses. More than a few kitchen table myringotomies were performed, as well as hospital surgeries like mastoids and tonsils.

Few EENT/ophthalmology practices in that time (or since) were mother, father and their son. Following the termination of a 40-year lease in Fort Smith, Murphey and Louise closed the west Arkansas clinic around 1970. Morriss added space to his Fayetteville office, and the three practiced together until the elder Henrys retired in 1984.

Lifelong learners, they continued attending monthly CME programs to stay current, including the EENT meeting at the Palmer House in Chicago every year. At age 80, Dr. Murphey Henry even signed up for an H&R Block class so he could do his own taxes.

The next generation of Henry ophthalmologists have furthered strong advocacy for Arkansas patients and medicine. A son, ophthalmologist Paul Henry, MD is married to Mary Jo Henry, MD, a radiologist. He served as president of the Arkansas Ophthalmological Society and is a graduate of the Academy’s Leadership Development Program, class of 2004. Paul and his father continued the Henry Eye Clinic until Dr. Morriss Henry retired at age 86.

A daughter, ophthalmologist Katherine Henry Baltz, MD, has been an Academy councilor and president of the Arkansas Ophthalmological Society and on the board of the Women’s Foundation of Arkansas and the Arkansas Lighthouse for the Blind. Kathy’s ophthalmologist husband, Tracy Baltz, MD, has served on the council of the Arkansas Medical Society and as president of the Arkansas Ophthalmological Society.

Another son, lawyer Mark Henry, JD, has followed in his mother’s legal footsteps. He is in intellectual property practice and a trial lawyer. Today at least two to three of the Henry grandchildren are considering or beginning a medical education.

Many tributes have been paid to giants of American ophthalmology such as those who research, publish articles, train future physicians, discover new surgical procedures or chair a department. Sometimes, the spotlight falls on the quieter, yet impactful people that have touched so many without fanfare. It has been said that few Renaissance men or women exist. Yet, the Henry family has contributed greatly across many aspects of Arkansans’ lives across many decades, and their dynasty has only just begun.

How many of us have been told that “Your grandmother did my tonsils, and now you are going to do my cataract!” How wonderful to look at lives that bettered the ophthalmology field, benefited untold numbers of patients, but also touched Arkansas citizens across so many critical areas!
Senior ophthalmologists share the best of what they’re reading this summer. Share what you’re reading and send your review to our book review editor, Robert L. Stamper, MD, at scope@aoa.org.

Mount Misery
By Samuel Shem
Reviewed by Alfredo A. Sadun, MD, PhD

How does one follow up on the amazing success of “House of God?” I don’t think I know of any of my physician contemporaries who haven’t read this book. “House of God” came out in 1978 and described, with exaggeration, satire and comedy, the grueling emotional grind of a medical internship.

Samuel Shem, a pseudonym for Stephen Bergman, was so shaken up by this experience (at Beth Israel, Harvard) that he wrote the book as a form of expiation. Then, in a probably state of emotional burnout, he switched fields to psychiatry. Which brings us to “Mount Misery,” the story of Samuel Shem’s psychiatry residency.

This second novel of his provides a fascinating look into the world of psychiatry and mental illness through the eyes of the sensitive and naïve resident, Dr. Roy Basch. Like so many psychiatry residents, Basch finds himself drawn to the study of psychiatry because of his own struggles with mental illness. Basch grapples with the ethical dilemmas and moral complexities of the field and with the classical balance during any residency between learning, providing service and working towards the institution’s needs.

The institutional needs here are grossly exaggerated, but that’s the point and what makes this book so relevant to modern medicine. Most of the doctors in the book are less interested in their patients’ mental health and more on things that make their own lives better or easier. So, the attendings concentrate on such things as drug company research grants and kickbacks, easy insurance money and their own professional advancements.

This is epitomized by a corrupt and abusive hospital administrator, a manipulative mentor and several staff doctors who are only focused on their own academic careers, relationships with pharmaceutical companies and maintaining the status quo even at the expense of the patients who are not afforded much compassion.

Basch’s own experiences with depression and anxiety are part of his journey of self-discovery as a psychiatry resident. In the telling of his tale, Freudian analysis is completely skewered. We are also shown the ways in which mental illness impacts personal as well as professional relationships. The novel concludes that empathy and compassion should be the foundational stones for our dealings with patients with mental illness. Without giving much detail, Basch makes a pitch for cognitive psychology instead of more traditional analysis.

Although the dialogues are invariably sharp and witty, the strength of the book is the exploration of complex professional motivations and perspectives on the part of world-famous medical school academicians. In this regard, psychiatry is not so different from other specialties, including ours of ophthalmology. And Harvard Medical School is not so different from our own academic institutions. Through Basch’s eyes, I saw the fallout of medical school politics that hurt patients and residents in training. Though exaggerated the values and politics had the ring of truth and this excess of general academic politics made me cringe. I hope it’s not nearly that bad.

Cobalt Red: How the Blood of the Congo Powers Our Lives
By Siddharth Kara
Reviewed by Robert L. Stamper, MD

For the past several decades, I suspect, like most people, I have plugged the charger in for my cell phone, laptop, tablet, toothbrush, etc. without thinking at all about the origins of rechargeable technology, much less the people who make it possible.

Perhaps, I have appreciated the creative geniuses from Silicon Valley that designed the technology I am using but never gave a thought to the people at the supply chain
bottom that make it possible. Siddharth Kara, an internationally known scholar and expert on modern day slavery spent two years researching the mining practices that provide the essential minerals that enable our rechargeable world.

Currently, rechargeable consumer electronics and electric vehicles almost exclusively use lithium-ion batteries to supply power. These batteries depend on lithium and even more on cobalt to function. More than half of the world’s reserves of cobalt are found in the Democratic Republic of Congo.

The Congo, for more than a century and a half has supplied the world including the U.S. with diamonds, uranium, palm oil and rubber. Very little of the benefits of these resources have trickled down to the average citizen while international corporations and corrupt local leaders have been enriched. About three-fourths of Congo’s inhabitants live below the poverty line. In recent years, the Chinese have taken the place of the predecessor European exploiters and are estimated to control the majority of the world’s supply of cobalt.

Through direct inspections of the mining sites (usually under the intense scrutiny of armed soldiers) and personal interviews of miners, their families and some supervisory people, Kara has provided the details of a form of slavery as cruel and deadly as any of the more well-known ones of history.

Mining rights for cobalt and lithium (amongst other minerals) are granted by the government to mining companies originally owned by the government but now largely owned by Chinese companies who split a fraction of the proceeds with the government. Cobalt is found in veins (like gold). Most of the companies use large excavating equipment to mine but machines can’t find veins, so large swathes of land are turned into huge pits. However, the percentage of cobalt per cubic foot of machine digging is relatively small. The people who work for these companies are salaried at almost reasonable levels with health benefits.

However, the best way to find the high-yield veins is by hand digging trenches and tunnels. So, people from surrounding villages are recruited either by economic necessity or by military power and forced to work as artisanal miners (i.e., independent contractors). They receive no salary or benefits. They work 12- to 14-hour shifts in often dangerous conditions with no protection from the toxic dust and suffocating tunnels far beneath the ground. They face the constant possibility of a collapse of the tunnel where they are entombed. They put rocks into sacks which they are forced to sell to local negociants, mostly from China, at $1 or $1.50 per sack.

A good miner can fill maybe two of these sacks in a long exhausting day. The women wash the rocks in polluted ponds. The children are yanked from school as young as 10 to dig. If there is an on-the-job injury, tough luck. The next child is pulled out of school to fill the absence so the family can eat. The negociants sell the sacks to intermediaries who then sell them back to the mining company and the ore is mixed with that mined by machine. If the miner tries to sell his sack outside the system, he faces a beating or even a bullet.

Despite the tens of thousands of people caught up in this system, the process allows the mining companies, the government and the end-users like Apple, Samsung, Dell, Tesla, etc. to claim that there is no child labor or forced labor involved in their products. Everyone turns a blind eye to this inhumane system. And when cobalt no longer is desperately needed, the people of the Congo will be left with a devastated landscape and an unimaginable human disaster. The author suggests some simple changes that could help improve things significantly. For me, this was a sad and highly disturbing wake-up call.

The Wager: A Tale of Shipwreck, Mutiny, and Murder
By David Grann
Reviewed by J. Kemper Campbell, MD

David Grann’s latest book combines elements of C.S. Forester’s Horatio Hornblower sagas and the “Mutiny on the Bounty” movies with equal parts of William Golding’s “Lord of the Flies” and Daniel Defoe’s “Robinson Crusoe,” while adding a dollop of Erle Stanley Gardner’s “Perry Mason” series as a garnish.

A successful nonfiction author must be astute in choosing historic events which are both unfamiliar and compelling to the general reader. The skillful writer can then generate enough suspense to propel the narrative. This book attains these goals admirably and, thus, expect no spoilers in this review. Eight pages of color plates and five maps of the areas traveled enhance Grann’s descriptive prose.

Grann again demonstrates that his ability to make long-deceased characters come alive is unsurpassed. His research and documentation of the voyage are meticulous, including his personal follow-up to the forlorn and frigid
region of South America where the castaways were marooned.

Readers who have never sailed will find themselves drawn into this voyage as if caught by the treacherous currents of Patagonia. They will also be appalled by the danger involved in sailing wooden ships into uncharted waters while simultaneously risking death from the diseases of typhus and scurvy.

Neither does Grann shrink from recognizing the class distinctions and racial prejudices of 18th-century English society. These rigid rules of “civilized behavior” begin to fade as the men struggle to survive. Birthright eventually matters less than strength of character. In summary, any reader who craves a seafaring adventure which is destined to become a number one best-seller should accompany the men on their perilous journey.

It is remarkable to learn that a very small number of polluters (oil companies, etc.), 100 in all, account for 70% of all carbon emissions

engineers, economists, agricultural experts, mathematicians, etc. all who share their views on the imperative nature of aggressive and far-reaching changes in our approach to human behavioral induced global warming.

The information garnered from each chapter should serve as a wakeup call to governmental leaders, but the response has been apathetic at best. As many of the chapters suggest, the changes will, by necessity, induce hardships among wealthy nations and for inhabitants of the Global North; this is a tough sell for politicians attempting to be elected or to remain in office.

There are numerous eye-opening facts throughout the book. It is remarkable to learn that a very small number of polluters (oil companies, etc.), 100 in all, account for 70% of all carbon emissions. It is the latter that contributes most to global warming. What is equally as concerning, despite increased awareness of environmental changes, one third of all anthropogenic (man-made) carbon dioxide emissions since the Industrial Revolution have occurred since 2005; the trend is not improving. Owing to this, some of the authors predict that by mid-century (as soon as 25 years from now) 1 billion people will live on uninhabitable land, with immeasurable but massive geopolitical fallout.

It is interesting, and daunting at the same time, to note that in the past nations have mobilized rapidly for war, as in the case of World War II, and in response to the recent pandemic, but the environmental crisis that we face fails to generate an appropriate response, according to the authors. One writer excoriates the media for not properly taking charge of the opportunity to create the mindset necessary for the task at hand.

Each chapter is laden with information that should serve as a wakeup call to all of us, but as mentioned above, humans and corporations must change activities. Let’s consider a diet rich in beef, with the hamburger as the yardstick. Producing the 10 grams of protein needed for a hamburger, results in the emission of 2 to 10 kilograms of carbon dioxide and requires 5 to 35 square meters of land. It also requires 100 to 600 liters of water for irrigation and 40 to 80 grams of nitrogen fertilizer (which, in turn results in additional greenhouse gas emissions). A switch to a plant-based diet would reduce all those figures by nearly 90% according to one chapter’s author.

Although occasionally tedious and very alarming at times, and the fact that some of the information is duplicated by some authors, the book raises many important concerns about our climate and how we are failing to heed the warnings of those in the know. I consider this book to be vital for all to read. Many of the chapters finish with quotes by the author. I find these two to be enlightening:

“Change is often the hardest just before you make it. We too easily focus on what we think we are losing, finding it so much harder to imagine what we might gain.”

“Nationalism, military power and geopolitical disparities are fundamental to the dynamics that have repeatedly stymied efforts to reach a global agreement on rapid decarbonization.”
We deeply appreciate your amazing generosity to the Academy Foundation and look forward to seeing you at AAO 2023 in San Francisco and thanking you in person.

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The Orbital 2023: Gold Rush celebrates our return to California at San Francisco’s iconic Westin St. Francis Hotel on Sunday, Nov. 5. Don’t miss this opportunity to reconnect with your colleagues for a fun, memorable evening and, most importantly, support the Academy programs that impact us all. Take part in the live and silent auctions featuring Conversations with Legends, unique items and exciting experiences.

Join Chair Christie L. Morse, MD, and The Orbital 2023 Committee to celebrate the Academy’s Leadership Development Program (LDP), the beneficiary of this year’s fundraising.

Tickets are limited; get yours now at aao.org/theorbital.

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Join us as we honor ophthalmic leaders David and Molly Pyott for their philanthropy and deeply held commitment to the ophthalmology community. They created the David and Molly Pyott Foundation, whose mission is to teach and educate ophthalmologists worldwide to provide better eye care, help disadvantaged youth secure employment, and improve care for disabled individuals. Make a gift in honor of the Pyott’s by submitting an ad or personal message and photo to be featured in The Orbital 2023 commemorative tribute book. The deadline is Aug. 31. Don’t miss it!

**TRUHLSEN-MARMOR MUSEUM OF THE EYE DONOR APPRECIATION RECEPTION**

Have you donated to the Truhlsen-Marmor Museum of the Eye? Donors will be invited to attend this special reception held during AAO 2023. Academy CEO Stephen D. McLeod, MD, and I will be on hand to thank those donors who have given $1,000 or more to the Museum of the Eye. It’s not too late to donate and join us at this special reception in San Francisco during AAO 2023. Make your gift at aao.org/donate. More information to follow for our donors.

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Thank you for supporting the Academy Foundation and the ophthalmology community. I wish you a wonderful, healthy, and safe remainder of the summer.

See you in San Francisco!