



SCOPE

Morton F. Goldberg, MD

By Marco Zarbin, MD, PhD

The professional life of Morton F. Goldberg, MD, spans myriad leadership positions as well accolades over more than few decades.

As the director and William Holland Wilmer professor of the Wilmer Ophthalmological Institute of the Johns Hopkins University School of Medicine from 1989-2003, he also found time for these other positions: president of the Macula Society, president of the Association for Research in Vision and Ophthalmology (ARVO), president of the Association of University Professors of Ophthalmology (AUPO) and editor of *Archives of Ophthalmology* (now referred to as JAMA Ophthalmology).

Dr. Goldberg's seminal contributions to ophthalmology and numerous awards and honors include: membership in the Institute of Medicine (National Academy of Medicine), the Howe Medal of the American Ophthalmological Society, the Ida Mann Medal of Oxford University, the Isaac Michaelson Medal of the

Israel Academy of Natural Sciences and Humanities, the Weisenfeld Prize of ARVO and the Arnall Patz Medal of the Macula Society.

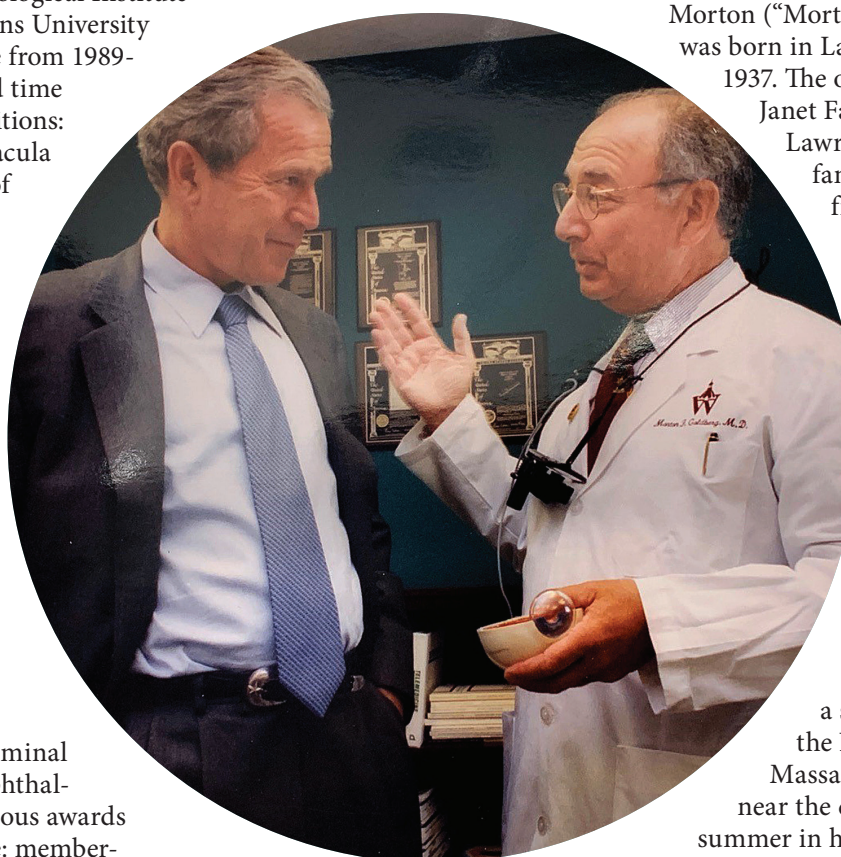
Dr. Goldberg has contributed over 600 papers to ophthalmological literature and published

10 books on subjects from eye trauma to genetic and metabolic eye disease. All of this information is readily available from his curriculum vitae, which can be accessed through the internet. *Scope's* focus on Dr. Goldberg will explore the people, events and decisions that shaped the career of this remarkable individual.

CHILDHOOD

Morton ("Mort") Falk Goldberg was born in Lawrence, Mass. in 1937. The only child of Helen Janet Falk (also born in Lawrence although her family had immigrated from Vilna, Lithuania) and Maurice Goldberg (who also immigrated from Lithuania in a region currently part of Belarus), Dr. Goldberg's family moved to Amesbury, Mass., when Mort was 3 years old.

Amesbury is a small town near the New Hampshire-Massachusetts border near the coast. During the summer in high school and college, Mort served as an ocean beach lifeguard. The 15-mile-long beach presented big, rolling waves, a strong undertow, and 60-degree Fahrenheit water temperature. Each summer morning, Mort



Morton F. Goldberg, MD, with President George W. Bush at the Wilmer Eye Institute, approximately 2 weeks before September 11, 2001.

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completed a one-mile swim, and on several occasions, he saved swimmers from drowning. From these experiences, Mort's interest in scuba diving, marine biology, and water life had their origins.

Although Mort considered becoming a marine biologist, exposure to his father's general medical practice fostered an interest in medicine. Maurice Goldberg's office was based in his home. Mort made house calls with his father (\$3/house call visit). Through this experience, Mort was exposed to the full spectrum of society.

Many patients were poor and could not afford the \$2 charge for office visits, which led to bartering. Patients offered what they could in exchange for medical care; e.g., four lobsters/visit. Physicians were the most respected persons in the town. Apart from brief contemplation of marine biology, Mort never seriously considered anything other than a career in medicine.

EDUCATION

Mort was a precocious student (e.g., transitioned directly from kindergarten to second grade), and he was the valedictorian of his public high school class. Mort's love of English led inevitably to his love of writing. He served as the editor of the senior class yearbook. As a high school student, he was a reporter for the *Amesbury Daily News* and wrote a weekly byline column: "Report from Mort." The column featured interviews with various leaders at the high school, such as the football coach. Mort explained that he was paid 25 cents/inch, so he quoted the interviewees at length!

In high school, Mort was fortunate to have outstanding teachers in Latin (Otto Wagner), English (Roland Woodwell) and biology (Frank Kozacka), all of whom were graduates of Harvard and who



Mort as an ocean beach lifeguard, Massachusetts, age 20.

wrote letters in support of his college application. Although accepted at Yale, Cornell, Dartmouth, and Brandeis, Mort received a scholarship at Harvard, which was a source of great pleasure as well as pride for his parents. Mort's respect for his Latin, English, and Biology teachers, though, guided his choice. Mentorship at this moment and at many other critical points in his life played a major role in the career-defining choices Mort made.

At Harvard College, Mort was a biology major, magna cum laude, PBK, and once again was inspired by his teachers, some of whom were Nobel laureates, e.g., James

Watson and George Wald, and all of whom were open to speaking with undergraduates and committed to their education. After his sophomore year at Harvard, Mort spent the summer at Woods Hole, Mass., where he indulged his fascination with marine invertebrates. This knowledge later led to some apt descriptions of ophthalmic clinical findings, including the "brittlestar" description of the posterior tunica vasculosa lentis present in patients with persistent fetal vasculature and the "sea fan" description of retinal neovascularization in sickle cell retinopathy. After his third year, he

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spent the summer at the Jackson Laboratory in Bar Harbor, Maine, where he learned about genetics.

Mort loved all the courses at Harvard Medical School graduating cum laude, except for psychiatry, which is somewhat surprising in view of the scope of responsibilities he would have as a department chair. Nonetheless, the subject which held his attention most deeply was pathology, possibly because of the influence of yet another mentor, Professor Arthur Hertig, a noted gynecological pathologist who studied blood vessels in uterine development and blood vessel physiology. When Mort sought to complete an elective with Hertig, Hertig advised him to study with David Cogan instead, explaining that Dr. Cogan was a better pathologist! As it happens, Dr. Cogan was developing the trypsin digest technique with Dr. Toichiro Kuwabara at that time. This pioneering work immediately engaged Mort's interest, afforded him an opportunity to work closely with Dr. Cogan, and, most importantly, enabled him to know Cogan well. Dr. Cogan was brilliant, humble, honest, and charming. It is because of Dr. Cogan's mentorship and example that after graduation, Dr. Goldberg chose to pursue a career in ophthalmology.

OPHTHALMOLOGY

The story of how Dr. Goldberg came to be a Wilmer resident will not surprise and may amuse those who are familiar with the past and current resident selection process. After explaining to Dr. Cogan that he wanted to be a resident at the Massachusetts Eye and Ear Infirmary, Dr. Cogan advised Dr. Goldberg to go to the Wilmer Ophthalmological Institute instead.

During this conversation, Dr. Cogan called Dr. A. Edward Maumenee, the chair of Wilmer at the



Mort at approximately 3 years of age.

time, whom Dr. Cogan knew well. He suggested that Dr. Maumenee accept Dr. Goldberg as a resident. Dr. Maumenee agreed "on the spot" with the proviso that Dr. Cogan accept a Hopkins medical student whom Maumenee was not going to take as a resident at Wilmer.

Mort loved all the courses at Harvard Medical School except for psychiatry, which is somewhat surprising in view of the scope of responsibilities he would have as a department chair.

er. At that propitious moment, Dr. Goldberg literally had never heard of the Johns Hopkins Hospital, of the Wilmer Ophthalmological Institute, or of Dr. Maumenee. Such was the influence of Dr. Cogan's mentorship and the trust that Dr. Goldberg placed in this gentle, gifted, and humble man.

While Dr. Goldberg was a Wilmer resident, there were only four full-time faculty members: Dr. Maumenee, Dr. Frank Walsh, Dr. David Knox and Dr. James Duke. Each was inspiring in a different way. Dr. Knox was like a "big brother" to Dr. Goldberg. Dr. Duke fostered Dr. Goldberg's ongoing interest in eye pathology. Dr. Walsh, arguably the greatest neuro-ophthalmologist in the world, had a teaching style that reflected simultaneously his respect for the residents, his concern for his patients, his great humility, and his awesome fund of knowledge and clinical experience. The quality of the Saturday morning conferences, run by Dr. Walsh, was legendary and had a great impact on Dr. Goldberg. When Dr. Goldberg assumed responsibility as the chair of Wilmer, he never failed to attend resident teaching conferences, and he conducted them masterfully, with evident pleasure. The primary role model in Mort's life at that point and for many years thereafter, though, was Dr. Maumenee.

Dr. Maumenee was an excellent and innovative surgeon, had an encyclopedic fund of knowledge, set high standards for everyone including himself, was charismatic, and was an excellent fund raiser, an activity that at the time was not held in high regard by many faculty members at Hopkins. In short, Dr. Maumenee was the exemplar of a department chair, and he had a profound influence on Dr. Goldberg's values concerning scholarship, clinical excellence, and leadership.

As a resident, Dr. Goldberg was academically precocious. He described, for example, fundus anomalies in the Waardenburg syndrome and corneal findings in mucopolysaccharidoses such as the Hunter syndrome. In fact, Dr. Goldberg's pioneering work describing sickle cell retinopathy was done when he was a second-year resident! Dr. Goldberg explained that a number of scleral

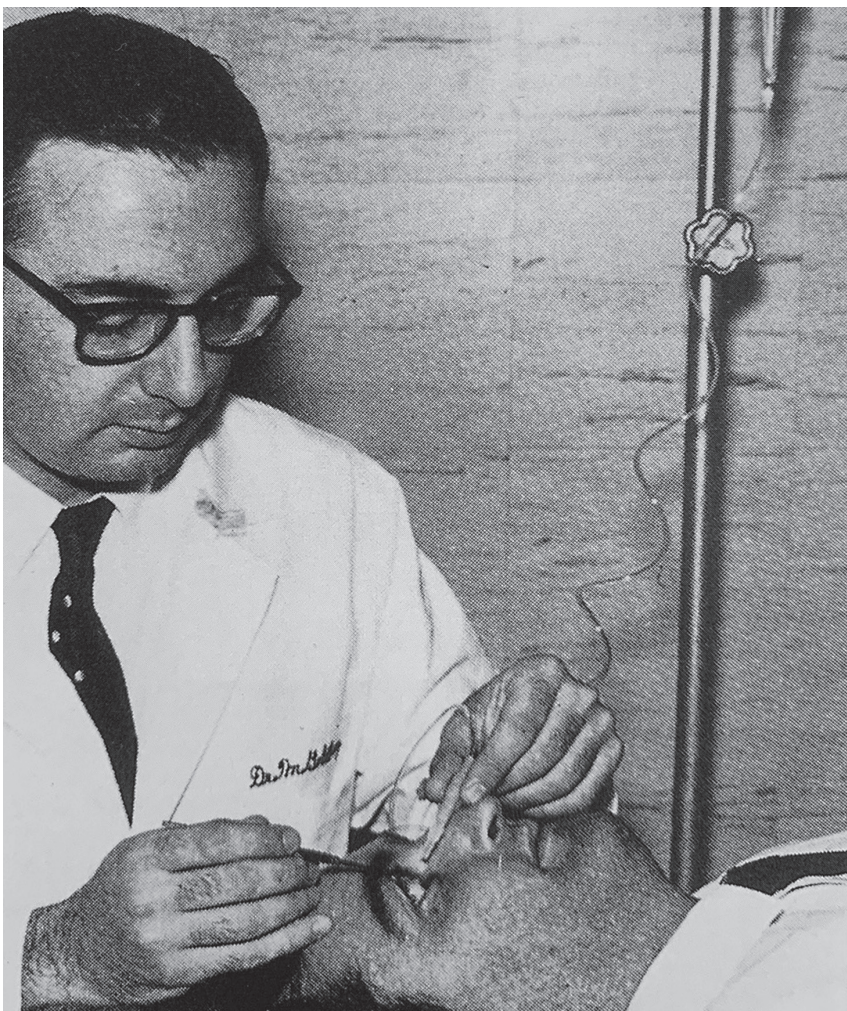
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buckle procedures for retinal detachment in patients with sickle cell disease had resulted in phthisis (due to anterior segment ischemia).

During a trip to the Bahamas in which he was scuba diving at 70 feet, he saw enormous sessile colonial soft coral, *Gorgonia flabellum*, also known in the vernacular as “sea fan”. After returning from the trip, he examined fundus photos of retinal neovascularization in patients with sickle cell retinopathy and recognized the morphological similarity. As patients with hemoglobin sickle cell (HbSC) disease and vitreous hemorrhage were admitted to the Osler medical ward, Dr. Goldberg then began to seek out and do fundus drawings of these patients at night. He identified retinal neovascularization on fundus exam and later examined the patients with Dr. Robert Welch, one of two principal retinal surgeons at Wilmer (the other being Leslie Harrell Pierce).

Dr. Goldberg mentioned to Dr. Welch the morphological similarity of the retinal new vessels in patients with HbSC disease and sea fans. Dr. Welch agreed immediately and then brought to work a preserved *Gorgonia* specimen of his own to show Dr. Goldberg! It is remarkable that the characterization of sickle cell retinopathy pathogenesis developed by Dr. Goldberg more than 50 years ago continues to be regarded as accurate. This classification was the first to use fluorescein angiography as a basis for defining the different stages of a retinal disease.

Dr. Goldberg chose to pursue fellowship training under the tutelage of Victor McKusick, MD, a professor at Hopkins and the father of medical genetics. When asked why he did not pursue additional surgical training, Dr. Goldberg explained that his surgical anterior segment and retina training



Dr. Goldberg as second year resident, Wilmer Eye Institute, 1964.

as a resident and Wilmer Chief Resident were robust. These experiences and Dr. Goldberg's growing familiarity with Dr. McKusick's textbooks on medical genetics led Mort to believe that ophthalmic genetics was “the future.” Recent treatments of blinding retinal disease (e.g., Leber Congenital Amaurosis) with gene therapy have validated that perception.

CHAIRMANSHIP

At the completion of fellowship training, Dr. Goldberg was offered a lucrative private practice job in Miami, where he wanted to live. His love of writing, however, rendered complex what otherwise could have been a simple choice. Dr. Maumenee offered him a position on the faculty at Wilmer (for substantially less money) and even identified what is now

known as the Wilmer Portrait Room as Dr. Goldberg's office.

While contemplating these options during the remainder of his fellowship, Dr. Goldberg also was offered several chair positions, the most attractive of which was at the University of Illinois in Chicago. Discussing with Dr. Maumenee the decision to turn down the job at Wilmer, Dr. Maumenee said to Dr. Goldberg, “Don't you want to tell other people what to do?” So, at the age of 32, Dr. Goldberg became professor and chairman of the Department of Ophthalmology at the University of Illinois College of Medicine in Chicago, then the youngest chairman of ophthalmology in the United States and, possibly, the world.

Dr. Goldberg spent what he regards as 19 of the most produc-

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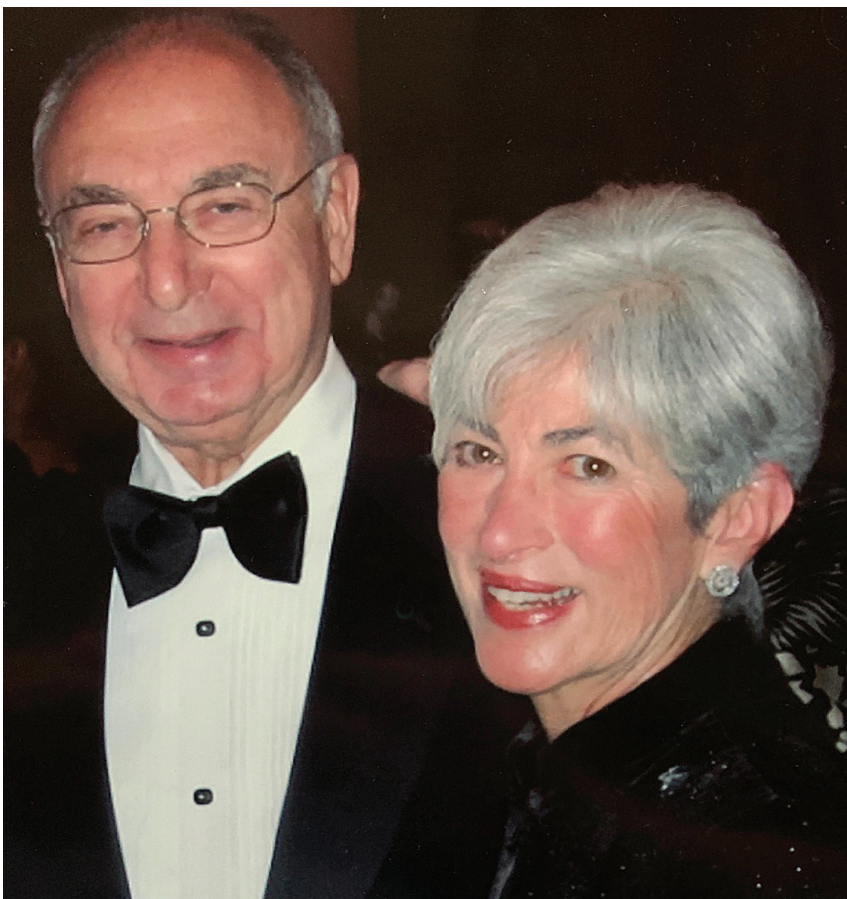
tive years of his life at the University of Illinois. He recruited fulltime staff, established a nationally ranked research program, raised the funds to build a research building, established a chief resident position in a program that trained 32 ophthalmology residents annually, and established teaching rounds (including grand rounds, bedside rounds, and teaching conferences). Dr. Goldberg recruited highly influential faculty members to his program (e.g., Professor Gholam Peyman and Professor Mark Tso) and trained some of the most important ophthalmologists of my generation (e.g., Professor Lee Jampol). Dr. Goldberg explained that when confronted with a problem, he would ask himself, “What would Dr. Maumenee do?”

Dr. Goldberg’s accomplishments as chair of the Wilmer Ophthalmological Institute were even more extraordinary. Dr. Goldberg served as an outstanding role model for the residents. He treated us (and our patients) with courtesy and respect, and this demeanor helped

Dr. Goldberg was a remarkable listener who made me, as a chief resident, feel that he really cared about us as people and about the world in which we, as residents, lived.

us to respect ourselves and to aspire to excellence as physicians.

Dr. Goldberg was a remarkable listener who made me, as a



Dr. Goldberg and his wife, Myrna Goldberg, MSW, pictured in 2000.

chief resident, feel that he really cared about us as people and about the world in which we, as residents, lived. He had a great sense of humor and generosity, which enabled us to really enjoy professor’s rounds, which he conducted with disciplined regularity. I suspect that he even let us win bets on clinical unknowns so that he could enjoy the pleasure of our company outside of work at local restaurants. Dr. Goldberg also gave wise counsel and never put his own interests ahead of those of us who sought his guidance. He was like a wonderful father, never allowing his larger concerns to intrude into our lives. It seemed to me that we, the residents, were the center of his universe.

Institutional excellence is not due to any single individual. It is the fruit of the labor of many talented, dedicated individuals, as with an orchestra. At Wilmer, Dr. Goldberg was a remarkable

conductor of this ensemble of committed individuals. Wilmer was ranked the No. 1 ophthalmology program in the United States in *US News and World Report* for 12 of the 14 years he served as chair. Following the example of his mentors, Dr. Goldberg was self-sacrificing and always gave credit to his organization and deflected it from himself. At an AUPO workshop, Dr. Goldberg was asked to identify the number of endowed chairs at Wilmer (13 at the time). It was the largest number at any department in the United States, but one could barely hear his voice as he responded modestly. Most importantly, Dr. Goldberg was a servant leader. He knew his job was to serve everyone—the residents, the faculty, the staff, the donors, and the patients.

Dr. Goldberg’s stewardship of the Wilmer Institute was extraordinary. He increased the fulltime faculty from 64 to 132, increased the number of endowed chairs

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from three to 20, increased the number of outpatient visits from 58,000 to 120,000 a year, increased the annual operating budget from \$27 million to more than \$60 million, and increased the endowment from \$21 million to \$110 million. Dr. Goldberg recognized the need to expand Wilmer's research infrastructure and so secured the land and initiated the fund-raising effort that led to the construction of the Clarice and Robert Smith building, a freestanding eye research and surgery center.

In addition, Dr. Goldberg renovated all the major floors and the library of the Wilmer Institute (taking care to keep the portrait room!) and added two new floors to the preexisting Maumenee building. According to Suetonius, Augustus Caesar, once said,

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"I found Rome built of bricks; I leave her clothed in marble." Of course, the grandeur of Wilmer,



Dr. Goldberg spearfishing for Caribbean lobster, 1967.

both physical and intellectual, is longstanding, and it is the product of visionary leaders, including Drs. Wilmer, Woods, Maumenee, Patz, and the current chair, Peter McDonnell, as well as the fulltime faculty, residents, and staff. But the "Augustan marble" that Dr. Goldberg left at the close of his tenure, and that truly helped to keep Wilmer great, is not the buildings or the endowment. It is the values that he sought to instill in each of us as residents and in each of the members of the Wilmer Institute.

FAMILY

Mort met his wife, Myrna Davidov, at a beach party on the Severn River hosted by Dr. Charles Iliff, a prominent oculoplastic surgeon and member of the volunteer Wilmer faculty. Mort was a first-year resident at the time, and Myrna was a social worker at the Johns Hopkins Hospital.

Their union has been blessed with two children, Matthew Falk Goldberg (lawyer, 48) and Michael Falk Goldberg (chief of neuroradiology, Allegheny Medical Center,

and associate professor at Drexel University, 45). Matthew and Michael married wisely, and they and their wives have produced four grandsons, a source of great joy in Mort and Myrna's lives. Myrna is an intelligent, perceptive, and charming woman who not only created a loving home environment for Dr. Goldberg and their children. She also served as a source of wise counsel and support.

"I have never made any decision of consequence without her approval," Dr. Goldberg said.

CONCLUSION

Dr. Goldberg, MD, is one of the most influential ophthalmologists of the 20th century by virtue of his intellectual contributions, his leadership in many important ophthalmology organizations, his mentorship of hundreds of residents and fellows who have contributed to patient care through clinical practice as well as through innovative research, and through his visionary leadership of two highly important departments of ophthalmology.



Half Empty?

By Alfredo A. Sadun, MD, PhD

Is the glass half empty? Betteridge's law of headlines states: "Any headline that ends in a question mark can be answered by the word 'no.'"

This is not just a joke. It's one of several reasons we tend to think things are much worse than they really are. Journalists are taught to scare us and get our attention. So, they pose questions, without good evidence, that in our minds, suggests a horrible alternative. But we remain suckers for this and other journalist scams. We regularly forget that their agenda is to first get us to read, watch or click and then to entertain us. Information and understanding are low priorities.

You remember the lesson in high school. Newspapers learned that the headline, "Dog bites man" works, not the other way around. We get that. But if Martians came down to visit for a while, they would read our newspapers and assume that humans are the biters and dogs their bitten victims. The bias towards shocking us means that we, as well as the Martians, will usually get the wrong and dreadful impression.

Unfortunately, this gives most of us anxiety that things are going very wrong. Certainly, we've been acutely aware of many bad things lately including COVID, dysfunction in Washington D.C., the partisan divide, economic threats locally and globally,

international saber rattling, the rise of authoritarian governments, etc.

The Brookings Institution reports that almost half of all Americans anticipate that there will be another Civil War (presumably with fewer cavalry charges) in the next decade. Don't believe that. Don't lose sleep over these silly surveys. I saw a patient last week with positive visual phenomena as a symptom related to extreme sleep deprivation. She said she hadn't slept well since April 2020. Her extreme state of constant alertness had actually changed her brain chemistry. All I could suggest was going cold turkey from TV news, cable, and internet. I'm pretty sure she won't take my advice. Our overblown fears are the manifestation that the news presents an extreme version of "ascertainment" bias. Even if what we hear is true, it is not representative of the real world.

Unfortunately, that really feeds right into human nature, which was designed by evolution to examine the routine and daily world we each live in and be on the lookout for anything amiss or dangerous. It's a little like squirrels who must live their lives glancing over their shoulders, ready to race up the nearest tree whenever they see a moving shadow.

A second scientific explanation for our tendency to overreact to the bad news is that it is presented without numeracy. That is, either the numbers aren't given, or a pseudo-number is provided. The message from the media is: 1) Here's an alarming anecdote; then 2) It happened again! So, it must be a new trend; then 3) It's a crisis. Often, there's nothing new or critical about the crises.

In the 1970s we were told that fatal shark attacks were a new and terrible danger for Americans visiting beaches. In fact, the numbers were small (averaging about one per year in the U.S.) and, seen over a global and long-term view, not any higher than before. But a lot of cheap papers were sold, movies made and unfortunately, a lot of families changed their plans to surf and play at the water's edge.

The much greater risk would have been their car drive to the beach.

The lack of numeracy is further pushed by news media, cable and the internet, when they don't give us numbers to issues that should require them. Yet, we are usually offered qualitative answers to quantitative questions in an effort to alarm or persuade us. "There is arsenic in my tap water!" I saw this on an ad on TV for bottled water. Of course, there is arsenic in your tap water. A few molecules of arsenic are in all sources of water (even bottled). How much is okay? The Environmental Protection Agency says 10 micrograms/ml is the tolerable limit. That still means 10 parts per million. I might prefer a filter that reduces that to 0.01 parts per million, which still translates to over 10,000,000,000,000,000 molecules of arsenic per glass. I'd be happy to drink that water. As the toxicologists say, "It's not the poison, stupid, it's the dose." In other words, if it's to be informative, then the answer to a quantitative question can't be qualitative. It requires numbers.

Remember the Fukushima nuclear reactor disaster? Remember all the early reports of radiation leakage? First, the newspapers said that the accident caused an exposure of about 10 Sieverts (Sv)/hr. to civilians living nearby. Later editions published the number of 0.1 Sv/hr. That means the first report was a hundredfold mistake! So, I kept checking newspapers and magazine articles on the subject. When the scientific papers finally got published, the true figure turned out to be only .000001Sv/hr. The first number is lethal, the last hardly worth noting.

What the news articles didn't tell us was that you get about .001 Sv/yr. just from inhabiting the surface of our planet. Or that you get an extra 0.000035 Sv of cosmic radiation each time you fly across the United States. But don't worry; it's not the poison, it's the dose! By the way, how many people died from radiation at Fukushima? Many people I ask, guess in the range of hundreds to thousands. Any death is too much, but

From the Editor's Desk

the answer is, probably one. That's important to know if you are going to argue against future nuclear power plants as too dangerous. And how does that mortality rate compare to all the accidents associated with oil drilling, refineries, storage, transport, etc.? Nuclear reactors are probably one of the safest energy technologies around. Arguing such things without numbers is just ignorance.

But it's worse. When the news-cable-internet media do give us numbers, they often are just giving us the numerator of a fraction, without regards to the denominator. Of course, if you don't have the denominator, you don't have the real number. In the early days of COVID, I was telling my wife that COVID tended to kill old people (like me). She disagreed and then showed me a newspaper article making her point and describing three deaths in people aged less than 30. And she was right in that the point of the article was that the young were dying a lot. But the three were out of how many? In the city, the state, the whole country? Over what period of time? And how does that rate compare to COVID deaths in older people? It didn't say. The newspaper article was making the point with anecdotes, not data, and their conclusion was mostly wrong, but very alarming, which was exactly their intention.

Unfortunately, the transition from a dramatic case to a trend, and then a crisis, happens all the time and people use this drumbeat to become even more convinced that reality is terrible. Yet, put into correct numbers and context, it often turns out that things are better now than before (for example, fewer violent civilian deaths, fewer cases of people dying from terrorism and fewer deaths from military actions in the last few decades). Steven Pinker's "Enlightenment Now," makes these and similar points.

Pinker shows that the rates of murder (homicide), have come down in

every society precipitously in the last few centuries. Even the well-known increase in Mexico in about 2005 was a local high preceded and followed by much lower numbers. I also found it interesting that for over 200 years, it was much higher in South-west U.S. than in New England.

Pinker also shows that deaths in war have until 2015 been getting much lower as well. He shows how much safer airplane flights are now even compared to the 1970s and 1980s. The combination of ascertainment bias caused by news-cable-internet media wanting to shock us, together with innumeracy, leads us to the false conclusion that things are getting much worse, when the contrary is the case.

There is another form of innumeracy that we, as physicians, should be more familiar with. My patient says to me, "I have a new blood test, and it says I have a rare disease." The blood test is 99% sensitive and 99% specific. So, it must be right? I have to tell him, no. Especially if there wasn't a good enough reason to have taken the test in the first place. Medical scientists know about Bayesian analysis, but most MDs and almost all patients don't.

Bayes' theorem was that you multiply the pretest probability by the test probability. But if the pretest probability is very low, the positive screening test tells you very little. These tests were designed to be used in high-risk settings. I am often referred patients who had no symptoms but harbored great concerns, shared by their referring physician, due to positive lab tests. Most often, I explain to them that I'm convinced that they really don't have the disease that worries them. In fact, they should never have been even tested. We've learned the hard way that PSA tests for prostate cancer, mammograms for breast cancer and even chest CTs have to be done selectively. Even pathology specimens, which are generally very accurate, aren't perfect. If you do a temporal artery biopsy on a 90-year-old with symptoms of giant cell arteritis (GCA), and it comes

back positive, it probably is GCA. But if you blindly did the same biopsy on a 12-year-old without symptoms, notwithstanding the positive pathology report, it probably is not GCA. You shouldn't have done the test, and having done it, the results do not have the same meaning. Bayes understood.

In a related vein, sometimes, I hear a few of my patients tell me that they have decided on their own medical management, having already "done my research." I hate that phrase as it actually signifies an ignorant rejection of authority, education, experience, and credentialing. People have the right to read anything and to decide their own course of treatment, of course. But has the democratic spirit of equality devolved to where someone's ignorance trumps the expertise of an authority? When it comes to just self-determination, fine. I'm offended, and my patient ends up suffering. But when many do it, it becomes a social phenomenon, and it detracts from our social zeitgeist that depends on expertise and leadership to respond to general calamities.

So why are we still losing sleep? I've stopped watching all TV news stations. The world has gotten extremely good at spreading bad news; journalism seems to have lost its North Star, the internet and social media are influencing people more than institutions and experts can. So, it may become necessary for us to take personal responsibility for what news we believe and how we let it affect us. We should worry less. The sky is not really falling, it's just that it seems that every reporter is now a "Chicken Little" who just doesn't want to write that the sky is blue and still up. Unfortunately, there are too many who watch too much TV news, or worse yet, cable, or worst of all, internet news and social media, who may really think that the sky is falling.

I am not a Pollyanna. Indeed, there are several new threats that deserve our attention. But maybe we should also take some moments to celebrate the many things that have gotten incrementally better but don't make the News.

The Way We Were — Ivan Schwab, MD

Alfredo A. Sadun, MD, PhD

Dr. Ivan Schwab is a professor of ophthalmology at the University of California Davis School of Medicine. He has been the director of corneal services at UC Davis Medical Center. In addition to remarkable clinical and teaching credentials, he is known for the development of a bioengineered artificial corneal surface.

What makes Dr. Schwab most remarkable, might be his broad thinking on vision, ophthalmology, and evolution. I have heard him lecture on these subjects as well as on rare double rainbows. He sees more colors than most. He has reported on comparative ophthalmology, described the visual systems of mysid shrimp and of sharks, and his book, “Evolution’s Witness: How Eyes Evolved,” is a gem. It was named as a Notable Book of the Year by *Scientific American*. Dr. Schwab’s many awards include the Ig Nobel Prize in 2006 for why woodpeckers don’t get headaches.

Alfredo A. Sadun, MD: Ivan, thanks for this opportunity. This is going to be another in a series of interviews with colorful luminaries in ophthalmology that has several purposes. I’ll be particularly interested in creating a sense of the world of ophthalmology, particularly academic ophthalmology, when you began your career. Young ophthalmologists, especially residents and fellows, are likely to be surprised to learn how different things were “back then.”

Can you start us off with com-

ments about your early life?

Ivan Schwab, MD: I was born and raised in Kingwood, a small coal mining town in the northern part of West Virginia. Loving par-



Ivan Schwab, MD with a piranha from the Western Amazon.

ents and a rural childhood molded my early life and, in retrospect, it was as good as anyone could want. My mother was curious and always asked questions and read to me or for herself. My father was industrious and owned a pharmacy in this town of about 2000. I had to make my own distractions. I became interested in sports and in the animals around me as any kid in a rural setting would have done.

Dr. Sadun: Do you have an interesting childhood experience/story.

Dr. Schwab: I was expected to

work in the family pharmacy when I wasn’t in school. There, I learned about medicine when serving customers, without a knowledge of the underlying science of their medical conditions. There was a rather large man with large hands and acromegaly who used to buy snuff; there was a very disheveled man redolent of garlic for half a block, who was self-treating for some unknown illness; there was the woman with thyroid eye disease with proptosis and markedly red eyes that was so startling, one could not look away; the rural farmer with Dupuytren’s contracture that he attributed to a rattlesnake bite; and of course, the “black-faced” miners who had spent way too long underground. I knew these people by name and wondered just what I was seeing. Eventually, I would discover how these people suffered.

Dr. Sadun: So, your medical education began early and with an insight on the patient perspective. What was your next step in becoming a doctor?

Dr. Schwab: My mother further encouraged this interest with her questions about all things biologic. And both my older brothers headed for medicine as career choices. I grew up in a household steeped in biology and curiosity. Then I attended West Virginia University in Morgantown, and majored in biology intending on medicine as a career.

Dr. Sadun: Interesting stories in college?

Dr. Schwab: Comparative osteology was difficult because the instructor would give spontaneous “pop” tests. This would raise

Ivan Schwab, MD

a certain level of fear in all of us as we had no idea until we walked into class. One morning, we walked into a test that showed several bones and identifying characteristics which we had studied. But there were also bones that were not studied in class. I recognized the chicken bones because of a key bone—the furcula known to you as the wishbone—indicating this creature had been a bird. Growing up in a rural area, I knew the anatomy of chickens.

Dr. Sadun: You stayed on at West Virginia for medical school?

Dr. Schwab: Yes, though I spent the last six months at UCSF. I was raised near West Virginia University (WVU) Medical School. Northern West Virginia had a vibrant sheep industry with a woolen mill. My first grand rounds experience stunned me. By this time in school, I was especially interested in infectious and hereditary diseases. The patient was escorted into the large room and had a black eshcar on her forearm. Eventually, the infectious disease consultant gave the diagnosis of her cutaneous rash as anthrax (Woolsorter's disease). In another grand rounds, a father gave a history of mood swings, halluci-



Ivan at age 12.



Dr. Schwab dressed for the Ig Nobel Prize.

nations, weight loss, anemia, hypoglycemia and pancreatitis. Several members of the extended family had similar problems. There was a history of consanguinity. Eventually, the endocrinologist came up with the diagnosis of “maple sugar urine disease.” So, I assumed that these two diseases were rather common, but I have never seen a case of either disease again.

Dr. Sadun: Why did you decide to become an ophthalmologist?

Dr. Schwab: When I was in college, my brother, Larry, was doing his residency in ophthalmology at WVU. How could anyone not be fascinated by the gadgets, the surgery, and the exotic diseases we saw? The crowning push I received to go into this specialty came when I would later visit Larry, who was

working in Ethiopia, with the International Eye Foundation.

Dr. Sadun: Where did you do your residency?

Dr. Schwab: The program was directed by Bruce Spivey, MD — a genius in personnel management (at California Pacific Medical Center). The residency teaching was chock full of interesting information directed at me in an apprenticeship setting. Education is a real drug for me as I relish learning new information. During my career, I watched the surgical tools evolve without realizing the changes that were happening right in front of me. The phacoemulsification machine shrunk and, in the process became much safer and more efficient. The handheld tools and instruments became smaller

Ivan Schwab, MD

and more precise. Surgical loupes became operating stereoscopic microscopes with superb optics.

Although the instruments changed so gradually, one hardly noticed, but the sum of these changes resulted in stunningly good instrumentation. Teaching techniques including tools from the AAO improved, too, with better results from the residents that would follow. Clinical and basic science exploded with more emphasis on clinical trials and single subspecialty journals. For those who speak of “the good old days,” please understand that it is a golden age of ophthalmology right now. On the lighter side, we had a residents’ clinic for indigent patients. A man arrived as a new patient who was assigned to a resident to interview him. He refused the first resident because he was a first-year resident, the second one was refused because she was Chinese. He refused the next one because he had a beard, and he refused the last one because he was Jewish. That was all the residents available to see him at that time, so he left the clinic unseen.

Dr. Sadun: Fellowship?

Dr. Schwab: My first fellowship was at Pacific Medical Center in San Francisco under the tutelage of Bill Stewart, MD, and Dave Vastine, MD, during which I got six months of surgical training in ocular reconstructive surgery. The second fellowship was two years at the Proctor Foundation. When I finished my fellowship, I applied to an Academic cornea position at WVU where George Weinstein, MD, was chairman. He had a magnetic personality. I wanted to work with this man! When I arrived, George did something that I will never forget — he paid me more than the salary we had already negotiated. I told him that he had made a mistake and he said, “No, consider it a signing bonus.” I never forgot that gesture. It wasn’t a lot more money, but the message was



Ivan in Little League at age 10 (batted .297).

clear — he would support me, and he did. Remarkable man. I miss him.

Dr. Sadun: Interesting. Steve Ryan, MD did the same thing with me, but he called it a travel bonus. And I’ll never forget thinking, this is a man I can trust; he’ll always deliver more than he promises.

A final chance to express regrets, points of pride, joys, and a message to current people starting out:

Dr. Schwab: Discovery is a thrill, and I would have been enthralled with more work that resulted in real breakthrough discovery — especially in comparative ophthalmology. There have been many lasting satisfactions. I’m happiest with the people I have trained and those I have worked

with in various capacities. The residents and fellows are the real satisfaction. Most were smarter than I am, although they rarely understood that. To watch them grow as physicians and surgeons was a great thrill. And their questions. Always questions. I developed a series of “questions of the day” on ocular comparative optics, physiology, and embryology to get the residents and fellows thinking about the challenges that other animals had to face to gain sight. That would often keep them from asking as many puzzling questions of me that I could not answer. Then, the people who trained me that I most admire. Most had lasting influences on how I live my life, as well as on my profession.

David Glendenning Cogan, MD: Life of Discovery and Humility

By R. Nick Hogan, MD, PhD

David Glendenning Cogan, MD, was born on Feb. 14, 1908 in Fall River, Mass. His father was an Episcopalian minister whom Dr. Cogan described as “an ascetic who didn’t communicate much ... worked on Sundays and spent the rest of his week with his books.”

Consequently, his father’s personality allowed Dr. Cogan a relative amount of freedom in his actions when growing up, which he treasured. In Dr. Cogan’s oral history interview in 1990, he was asked what he considered the highlight of his career. His response: “I suppose the one word that says it all is freedom — freedom to pursue what I thought was right and promising, freedom to associate with persons whom I admire and respect, and freedom to identify with institutions that serve the common good.” Dr. Cogan’s life certainly demonstrated all these concepts.

Dr. Cogan had outside jobs during his school years, which he stated imbued him with “good work habits.” This ethic, incubated early in his life, continued and was the engine propelling Dr. Cogan’s intellect to produce a significant impact on ophthalmology and motivate those around him. While I was a fellow with Dr. Cogan at National Institutes of Health (NIH), I overheard another doctor say, “I don’t think Dr. Cogan works as hard as he used to — he doesn’t come to work until 10 a.m.” That doctor didn’t

know that Dr. Cogan awoke at 6 a.m. every day and read or worked on manuscripts from 7 a.m. until he went to work at 10 a.m. Even at age



David Glendenning Cogan, MD

83, Dr. Cogan was working more than most of the staff at NIH, five days a week and often on Saturdays.

Dr. Cogan’s decision to go to medical school was undoubtedly influenced by his aunt and his mother who were both MDs. In fact, his mother was an ophthalmologist — the first woman ophthalmologist at the Boston Dispensary, and one of the first women doctors at the Massachusetts Eye and Ear Infirmary (MEEI). Around 12 years old, he was allowed to accompany his mother to her clinics at Mass Eye and Ear on Saturdays.

It’s perhaps no surprise that by the time he was a sophomore at Dartmouth Medical School at age 21, he had decided on ophthalmology as a career. The decision was nurtured by his mother’s “high regard for ophthalmology and ophthalmologists” and enriched by his relationship with first The Dartmouth Eye Institute, and then with Mass Eye and Ear after his transfer to Harvard Medical School for his third and fourth years. During his medical senior year Dr. Cogan applied for an ophthalmology residency at Mass Eye and Ear, which was a natural choice derived partly from his familiarity with that institution, his mother’s successful tenure there, and the intellectual stimulation he experienced at Mass Eye and Ear while at Harvard Medical School, particularly with his adviser Dr. Edwin Dunphy, an ophthalmologist, who would later become Chief of Mass Eye and Ear and Chairman of the Department of Ophthalmology.

Dr. Cogan began doing research in ophthalmology while a resident at Mass Eye and Ear and immediately after finishing residency was appointed to the Howe Laboratory staff by Dr. Frederick Verhoeff, with whom he’d developed a close relationship. He performed research for nine months of the year and saw patients during the other three months, all for \$600 per year. Dr. Verhoeff retired at age 65 per Harvard rules, and Dr. Cogan at age 32 became acting director, and then director of the Howe Laboratory.

As director, Dr. Cogan fostered an environment based on freedom of thought and avenue of research, “I believe it is important

David Glendenning Cogan, MD

to appoint a person of promise and let him develop his ideas as he sees fit.” Although research applicability to clinical ophthalmology was encouraged, observations in the basic sciences were supported as Dr. Cogan knew that clinically pertinent findings might evolve. To this end, active discourse between clinicians and basic scientists was facilitated, including during the “brown-bag” lunches he held in the Laboratory wherein even the most junior staff were encouraged to actively participate. As Dr. Cogan stated, “Few patients realize the benefits they gain from what goes on in the back rooms of research.”

Because of the stature of the Howe Laboratory and the enlightened environment which Dr. Cogan created recruitment of a talented retinue of brilliant individuals ensued, many destined to become renown experts in their respective fields. These included Dr. W. Morton Grant whose research and amalgamation with the clinical expertise provided by infirmary surgeon Dr. Paul Chandler, developed into production of the leading textbook on glaucoma. Additionally, Dr. Grant compiled a compendium on the effects of toxic substances on the eye, which remains a premier source of information on this subject. Dr. Grant was completing an update of the fifth edition at the time of his death. Others included Dr. V. Everett Kinsey — cornea and lens physiology and retrolental fibroplasia, Dr. Jin Kinoshita — biochemistry of diabetic cataracts, Dr. Toichiro Kuwabara — corneal and retinal pathophysiology and ultrastructural pathology, Dr. Herbert F. Kaufman — herpetic keratitis and treatment, Dr. David Donaldson — photographic anatomy and pathology of the eye, Dr. Charles Schepens — binocular ophthalmoscopy, Dr. Robert Reinecke — temporal arteritis and stereopsis testing, Dr. Ephraim Friedman — choroidal and retinal blood



Dr. Cogan and his wife “Did” at their vacation home in Michigan.

flow, Dr. Gerald Chader — retinal pathophysiology, and Dr. Carl Kupfer — aqueous flow dynamics and lateral geniculate body innervation and several others.

Dr. Kupfer later became the first Director of the newly formed National Eye Institute (NEI) in 1970. As part of his effort to build an intramural scientific core he invited Dr. Cogan and other members of the Howe laboratory to come to Bethesda. As it happens, the Howe Laboratory was in a state of turmoil due to new issues promulgated by the Dean of Harvard University, and it seemed to Dr. Cogan that from a professional standpoint, this might be as good a time as any to leave. He joined the rest of his staff at NIH for what he called “a trial period” but which lasted 23 years. The group of scientists that moved to Bethesda from Boston became known as “The Howe Lab South”.

Dr. Cogan was pleased with the environs at the NEI as he had the same system as in Boston but in an expanded form. He had excellent facilities for videotaping patients and had a close association with the neurologic departments at the NIH. He was able to continue his pathology studies with Dr. Toichiro Kuwabara, a scientific relationship which had flourished for 35 years. “Brown-bag” lunch sessions

were again instituted which proved invaluable for the fellows and faculty that attended. Like in Boston, these generated ideas for further research. One disappointment Cogan expressed about the NEI was the physical separation of the basic scientists from the clinicians.

This was largely due to lack of space in the Warren Grant Magnuson Clinical Center (in building 10) where his office and labs were located. The basic scientists were housed in their own building a block away. Nevertheless, various conferences and meetings were arranged which eased the dichotomy to an extent. Cogan flourished at the NEI, saw neuro-ophthalmic patients and could “shift between neuro-ophthalmology and pathology freely”. A neuro-ophthalmology fellowship program was established and many of his trainees went on to become leaders in the field.

The greatest sadness in David Cogan’s life was the death of two of his four daughters. His oldest daughter, Christy, was killed in an automobile accident in 1962 at age 22. While I was a fellow with Dr. Cogan, he asked me to stay at his home in Chevy Chase while he and his wife, Francis (known as “Did”) were in Germany for several months as part of the Humboldt-Stiftung Award. In the winter of 1988, I received an early morning

David Glendenning Cogan, MD

phone call from Dr. Cogan's youngest daughter Priscilla informing me that her sister, Ann, had been hit by a snowplow in Rochester, New York, and did not survive. Priscilla said her parents were coming home from Germany the next day. When David and Did arrived at the house, Dr. Cogan looked as despondent as I had ever seen — another of his children had been taken from him and in much the same way. It was weeks before Dr. Cogan returned to his communicative and participatory self.

Despite thriving professionally at the NEI, Dr. Cogan found that living in Chevy Chase was a profound change from his life in Boston. His wife Did said, "If I had my choice, I'd go back to Boston". They found Chevy Chase to be "barely tolerable in the summer", and hence escaped to their vacation home in Michigan as often, and for as long as was possible. That home, near Leland on the shores of Lake Michigan, had been in Did Cogan's family for three generations.

Idyllically named "Nepenthe" (which in Greek means "that which chases away sorrow") the property figured prominently in Dr. Cogan's life and career. He and Did were married there on July 14, 1934. His "little books," "Neurology of the Ocular Muscles, and Neurology of the Visual System," were written in the garage on the property converted into a study, "It was just me and the chipmunks." Dr. Cogan had invited several of his collaborators and friends to Nepenthe, including Drs. Everett Kinsey, Morton Grant, Lorenz Zimmerman, Marshal Parks, ex-Sen. William Fulbright, Toichi Kuwabara, and others (including myself), where lively discussions transpired surrounding ophthalmologic problems and other salient topics. Of course, there were relaxation periods, but Cogan also spent a lot of time writing manuscripts and reading, "The cruelest



Dr. Cogan playing his piano at 1:00 AM.

thing you can do to a man is to expect him to sit on the beach and leave his work back in the laboratory." Besides offering relative solace for him to work, Cogan saw Nepenthe as "a place to garden do carpentry around the house, go hiking through the woods, and to beat my daughter in tennis." He complained that he physically couldn't do what he used to do, but he continued these activities well into his 80s. Additionally, Dave renewed his interest in playing the piano late in life (age 72) and would get up in the middle of the night and play, "It relaxes me and allows me to be creative in a different milieu."

Dr. Cogan's scientific creativity was far ranging and robust. This combined with his acute observational insights led to the descriptions of several clinical entities which now bear his name. He disliked the use of eponyms and thought eponyms should be used only if the descriptors for the problem were cumbersome or the etiology was unknown. Nevertheless, several entities he reported are now related using his appellation.

Because of his meticulous note-taking and unique record keeping system, Dr. Cogan was able to recognize that, of the many patients he had seen in clinic, there were 4 who

exhibited a fluctuating inflammation of the cornea and at some time also the abrupt onset of vertigo and deafness. He published these cases in 1945 and proposed the entity be called "Syndrome of nonsyphilitic interstitial keratitis and vestibulo-auditory symptoms." However, as additional cases around the country were recognized, the entity began to be called "Cogan's Syndrome". Dr. Cogan had a similar explanation for why his description of four cases of "congenital oculomotor apraxia with jerky head thrusts," first presented in his Jackson Memorial Lecture in 1952, was often called "Cogan's syndrome, type 2". He said, "I would not opt for an eponym in this case ..."

In 1963, Dr. Cogan presented a paper at the American Ophthalmologic Society outlining a microcystic keratopathy in five patients calling it "Microcystic dystrophy of the corneal epithelium". And as had happened before, subsequent investigators referred to it as "Cogan's microcystic corneal dystrophy", although now it goes by the moniker "Map-dot-fingerprint corneal dystrophy". In 1965 Dr. Cogan published a review of myasthenia gravis with a description of twitch movements in ptotic eyelids of myasthenic patients with movement from infraversion to the primary

David Glendenning Cogan, MD

position. This is still described as “Cogan’s lid twitch.” Also, in 1965, Dr. Cogan along with Dr. Toichiro Kuwabara, his primary collaborator at the time, published a description of “Focal senile translucency of the sclera,” which has become known as “Cogan’s calcific scleral patch”.

At a meeting of the Verhoeff Ophthalmic Pathology Society in 1968, Dr. Cogan discovered both he and Dr. Algernon Reese brought iris pathology specimens to share that depicted a hitherto undescribed disorder. In these cases, a cuticular membrane covered the surface of the iris with small, pigmented excrescences protruding through the membrane, dotted along the iris surface. Peripheral anterior iris synechiae and glaucoma were present. Details of these cases were published in 1969 by Cogan and Reese and the entity became known as the “Cogan-Reese Iris Nevus Syndrome.”

Dr. Cogan’s contributions to ophthalmic understanding included much more than just the eponymic disorders listed above. For instance, after visiting Hiroshima and Nagasaki in 1949 (under the auspices of the Atomic Bomb Commission), he authored the first description of radiation cataracts derived from atomic fallout. He elucidated important oculomotor factors in cerebellar disease, internuclear ophthalmoplegia, and the usefulness of optokinetic nystagmus in parietal lobe disease, *praeter plura*.

Dr. Toichiro Kuwabara transferred to the NIH with Dr. Cogan. Together Cogan and Kuwabara authored 64 seminal papers on histopathologic and pathophysiologic findings for a wide range of topics including corneal fat metabolism, vasculopathy in diabetes mellitus, fat deposition in arcus senilis, corneal cystinosis, Gaucher’s disease, lecithin-cholesterol-acyltransferase deficiency (LCAT), among many

others. Dr. Kuwabara brought ultrastructural analysis to many of Dr. Cogan’s descriptions. Dr. Cogan’s wife, Francis C. Cogan, MD, spent two years in Kuwabara’s lab, learning evaluation and management techniques and participating in research. In the early years after their marriage, she participated in research activities in the Howe Lab and at Mass Eye and Ear. An accomplished scientist in her own right, she published numerous papers on experimental studies in ophthalmology especially on microwave induced cataracts in 1976. Of the first 10 papers that Dr. Cogan wrote, his wife was co-author on six.

Dr. Cogan loved ophthalmology, the complexity of visual perception, and investigation of the maladies which interfered with it. David never stopped working, even up until his death on September 9, 1993 at age 85. He was laid to rest in Leland near the grave of his daughter Christy. “Did” died on January 18, 2002 and is buried alongside her husband of 68 years.

David Cogan’s legacy lives on through his seminal and classic publications, and through application of his name to endeavors he believed in. At Mass Eye and Ear, the David G. Cogan Pathology Laboratory was dedicated in his honor. Two endowed chairs have been established there, the David Glendenning Professorship in 1969, and The Edith Ives Cogan Professorship named for his mother, one of the first women ophthalmologists at Mass Eye and Ear. The David Glendenning Cogan Library at NEI was established in 1985. His extensive clinico-pathologic collection was digitalized and can be found at “The David G. Cogan Ophthalmic Pathology Collection” (<https://cogan-collection.nei.nih.gov>). Important elements of his neuro-ophthalmologic case collection are available on the Neuro-Ophthalmology Virtual Education Library (NOVEL) internet database — [The David G. Cogan Neuro-Ophthalmology Collection](#).

Dr. Cogan was a founding member of several institutions includ-

ing the Ophthalmic Pathology Club (now the Verhoeff-Zimmerman Society) and the Association of University Professors of Ophthalmology (AUPO). He established the Paul A. Chandler Visiting Professorship at Mass Eye and Ear. Because of his concern that details of ophthalmic history were being lost, David invited a group of interested ophthalmologists and historical scholars to present and discuss historical aspects of ophthalmology at the National Library of Medicine in Bethesda, Md. This first meeting of the American Ophthalmic History Society was in 1988 with 26 attendees and was followed thereafter with annual meetings in Bethesda. The society quickly grew, and now, 33 years later, there are over 60 active members of what is now known as the Cogan Ophthalmic History Society.

Although the above cognomen will keep his name alive in perpetuity, the personal memories of him, held fondly by his hundreds of students and colleagues are transcendent. David at no time was condescending or dogmatic. He taught compassionately via the Socratic method and avidly encouraged the careers of young and upcoming scientists and clinicians. The Cogan Award, given at the Association for Research in Vision and Ophthalmology (ARVO) meeting, honors young and productive researchers.

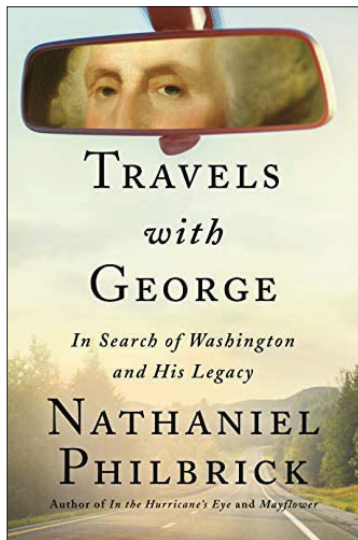
Dr. Cogan’s gifts to ophthalmology live on through his seminal and classic publications, and his extensive clinico-pathologic collection and neuro-ophthalmology cases now available on the internet. When asked how he would like to be remembered, David said “I think I would rest comfortably if they said, ‘He had his assets, he had his liabilities, he made mistakes, and he made contributions, but the contributions and accomplishments outweigh the mistakes.’”

David Cogan’s humility from a place of greatness, is an indelible part of his considerable legacy.

What We're Reading This Winter 2022

Book Review Editor - Thomas S. Harbin, MD, MBA

Senior ophthalmologists share the best of what they're reading this winter. Share what you're reading and send your review to scope@ao.org.



Travels with George: In Search of Washington and His Legacy
By Nathaniel Philbrick
Reviewed by J. Kemper Campbell, MD

The premise of Nathaniel Philbrick's latest book, "Travels with George," allows the acclaimed writer to juxtapose long-forgotten aspects of our nation's infancy with pertinent observations of today's society.

The reader fortunate enough to open this book will be beguiled by the author's lively and trenchant comments regarding George Washington's impact on our nation's remote past and also upon more recent headlines.

Philbrick, his wife and a Nova Scotia duck-tolling retriever named Dora made a similar journey more recently, following President Washington's travels visiting all 13 original states during the early years of his presidency between 1789-92. Readers unfamiliar with duck-tolling or Nova Scotia retrievers should visit YouTube or read this book to educate themselves.

Philbrick, who resides on the island of Nantucket in Massachusetts, has written previous books connecting his own life experiences to true historic events. "In the Heart of the Sea," which was also made into a movie, deals with the sinking of a whaleship in the South Pacific by a vengeful whale. "The Last Stand" is a detailed account of Gen. George

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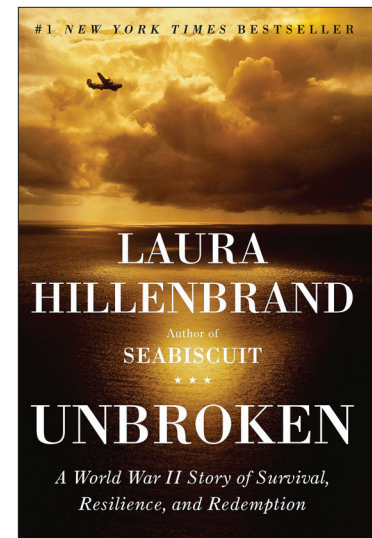
Armstrong Custer's final battle. Both books occupy space in the reviewer's library. The present book deserves its spot alongside.

Although Philbrick makes a cogent case for the United States being vastly different without the steadying influence of President Washington, the book is no hagiography. George Washington's flaws, especially his relationship with slavery, are not downplayed. Readers may draw their own conclusions about the lasting effect of Washington upon our nation after reading the book.

Regardless of the readers' preconceived notions about our first president, enough new facts are revealed, and old myths dispelled to keep the pages turning rapidly. Many people are aware that Washington's dentures

were not wooden, but fewer know they were fashioned from horse's teeth and hippo ivory. Fewer yet know that he first attempted transplantation of his missing teeth by purchasing nine healthy slaves' teeth and having them placed into his own mouth. All the transplants failed.

Philbrick's own trips were spiced by the unique and interesting characters he met along the way. He slept in at least two of the original beds Washington had used and was nearly drowned in a waterspout near Cape Cod. Dora encountered a large black snake, but no lasting harm ensued. Readers who choose to accompany Philbrick, Washington, Dora and their fellow travelers will be glad they did.



Unbroken: A World War II Story of Survival, Resilience and Redemption
By Laura Hillenbrand
Review by John R. Stechschulte, MD

This true story of Louis Zamperini was written by the author of "Seabiscuit." This book has remained on the bestseller list since it was published in 2010.

Zamperini was a troubled kid from Torrance, Calif. After fighting with bullies and when escaping from police, he displayed remarkable running speed. His brother Pete encouraged him to train in cross country running, which lead him away from delinquency.

What We're Reading

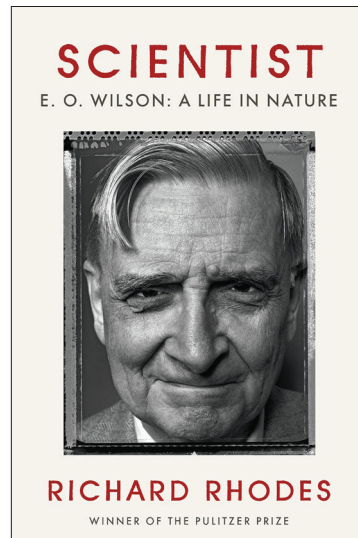
He became America's fastest high school athlete and even neared a mile time of four minutes flat.

Zamperini qualified for and competed in the 1936 Berlin Olympics. He didn't medal but he did set the world record for the fastest lap time in the 5,000-meter race. His dream was to win gold in what would have been the 1940 Tokyo Olympics.

In 1941, he entered the U.S. Army air forces and became a bombardier. While on a search and rescue mission, his B-24 Liberator malfunctioned, leading to a splash-landing crash in the Pacific. He and two other crewmates drifted in two small lifeboats for 47 days. The Japanese captured him near the Marshall Islands.

One year later his parents were told he was killed in action. He endured the horror of a prison and then a savage labor camp. With his Olympic status known, the guards targeted him for greater torture. He anticipated the U.S. victory while imprisoned because for weeks he saw American planes fly nearer and nearer his prison.

Although nearly heartbreaking to read, Zamperini's resilience of mind, body and spirit is inspiring. This is an amazing story of survival and forgiveness.



Scientist: E.O. Wilson:

A Life in Nature

By Richard Rhodes

Reviewed by Alfredo A. Sadun, MD, PhD

I've always enjoyed Richard Rhodes, whose works I had read often about physicists and the making of the atom bomb.

So, when I saw he had written about Wilson a month ago, I jumped at the chance. Soon after I finished this book, I heard that E.O. Wilson had just died, at the age of 92. Wilson was once a professor of mine. I took his course on ants at Harvard.

Students at MIT and Harvard were allowed one course per semester at the other institution. I found Wilson to be intelligent, gentle, earnest, and wildly enthusiastic. And his ideas were extremely fresh and imaginative. The early ideas on ant behavior set the seeds for his later works on sociobiology

I liked that intimacy and the point of view that came with it. As Rhodes said, Wilson could be said to have “saved” evolutionary theory by explaining the big bugaboo: altruism

that shook many institutions up. Rhodes wrote this piece lovingly and treated Wilson with kid gloves whenever he described the scientific, political, and academic controversies. It was evident, that Rhodes was a close friend of Wilson.

But I liked that intimacy and the point of view that came with it. As Rhodes said, Wilson could be said to have “saved” evolutionary theory by explaining the big bugaboo: altruism. Richard Dawkins popularized Wilson's explanation in his book, “The Selfish Gene.”

In studying the social behavior of ants and other animals, Wilson

PODCAST SERIES

Planet Money, NPR

www.npr.org/podcasts/510289/planet-money

Reviewed by John R. Stechschulte, MD

Several ophthalmologists have recommended this podcast series for review in Scope. Planet Money's goal is to be “The Economy Explained.”

Its first episodes in 2008, covered the U.S. housing and financial crisis. These podcasts are only six to 30 minutes long, yet they can cleverly cover complex issues such as tuition inflation, health care costs and the fraud scandal at Wells Fargo.

Most ophthalmologists have never taken a college economy course, but we can still easily learn about financial issues while enjoying Planet Money stories. As an example, a recent Planet Money podcast revealed why a single small New Jersey deli has a market cap value of \$100 million, and it tells us how the stock market works www.npr.org/transcripts/989625586.

Please recommend to scope@aao.org your favorite podcast series so they can be shared in future editions of Scope.

What We're Reading

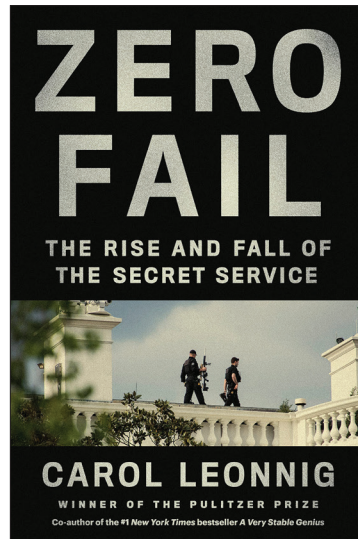
established the new field of socio-biology. He eventually concluded that human behavior is largely the product of heredity and the environment in a mathematically coherent way that calculates the amount of genetic preservation. Thus, he implied that there is really no free will; he called this the “genetic leash.” This, not surprisingly, caused a great blowback that came from what today we would call political correctness.

He eventually concluded that human behavior is largely the product of heredity and the environment in a mathematically coherent way that calculates the amount of genetic preservation. Thus, he implied that there is really no free will

In particular, he was severely criticized, rather unfairly, by those who didn't read or understand his work, as an anti-feminist.

Wilson's “deterministic view of human society” was targeted by several Cambridge scientists, including Stephen Jay Gould. These scientists, buttressed by liberal activists, accused Wilson of racism and misogyny. While presenting at the podium to the American Association for the Advancement of Science (AAAS)

in 1978, Wilson was attacked by audience members who poured a pitcher of water on his head. Wilson accepted a dry handkerchief and finished his lecture. My favorite quote of Wilson, which is most relevant in today's tribalistic society, is: “People would rather believe than know.”



Zero Fail: The Rise and Fall of the Secret Service

By Carol Leonnig
Reviewed by Samuel Masket, MD

Given the task of protecting the lives of the U.S. president and vice president (and their respective families) the Secret Service conjures an image of extremely dedicated agents working for a team that is highly organized and outfitted with “state of the art” technology.

But behind those physically fit and serious appearing agents who sport business suits, aviator sunglasses and clear wire earpieces, there are many other stories to be told.

As Leonnig writes, the Secret Service was originally an arm of the Treasury Department and is now in Homeland Security. It was charged with tracking down and rooting out currency counterfeiters. Following President Lincoln's assassination in 1865, its

responsibilities were expanded to include protecting the life of the president. As a result, additional agents were necessary, thus creating new recruiting and budgeting problems for the agency that continue even until today. It is surprising to learn that communications systems, as an example, are archaic; as we come to learn

The reader will come to learn that George and Barbara Bush were favorites of the agents because they were treated like “family.” On the other end of the spectrum were the Clintons: Hillary and Chelsea were reportedly disrespectful to the agents and Bill ... well, Bill was being Bill, making it hard to protect him

this is due in part to chronic underfunding, but also to inertia at high levels of the organization.

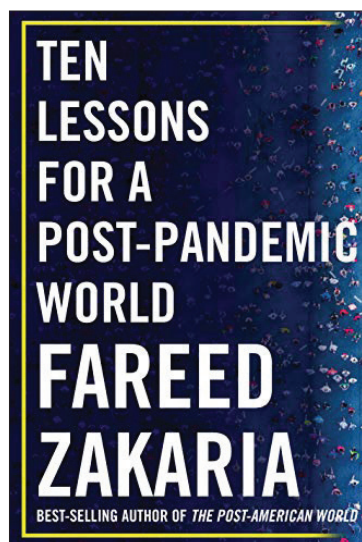
Following a historical view of the early days of the Secret Service, the book offers insights to the specific presidencies of Kennedy through Trump, the challenges of protecting POTUS (president of the United States), dealing with their families and fighting budget constraints while attempting to modernize the Service. The reader will come to learn that George and Barbara Bush were favorites of the agents because they were treated like “family.” On the other end of the spectrum were the Clintons: Hillary and Chelsea were report-

What We're Reading

edly disrespectful to the agents and Bill ... well, Bill was being Bill, making it hard to protect him.

But it is the fiascos and failures of the Secret Service that make the book a fascinating, but ultimately frightening read. We learn of heavy drinking and staying out late by agents the night before the Kennedy assassination, “good old boy” behavior with prostitutes and drunkenness in Cartagena in advance of an Obama visit, failure to keep an armed intruder from entering the White House when the first lady was present, etc.

There are other surprises in store for the reader. Moreover, one gets the sense that it is difficult for women and minorities to advance through the ranks. All of that told, however, there are dedicated and earnest agents who seem to keep the ship afloat and their stories are also shared. Overall, this is a somewhat shocking, but necessary read for all Americans.



Ten Lessons for a Post-Pandemic World

By Fareed Zakaria
Reviewed by Alfredo
A. Sadun, MD, PhD

It might seem premature to describe the post-pandemic world already. As I write this,

we are hunkering down from the latest omicron wave and things look far from resolved.

But Zakaria has proven prescient before, and I thought I'd give him another try. He succeeds in this work, written at the end of 2020, largely by drawing, from the COVID pandemic, a wider view of what works and doesn't work in our various societies and governments today. Mostly, Zakaria is a keen observer of what happens in the U.S., socially, politically, economically, and culturally. He described COVID in the historical context of other pandemics, but we, as students of medicine, already knew that ([see Dr. Newman in other issues of Scope](#)). It was the non-medical parts that fascinated.

In general, Zakaria has a positive tone. He celebrates how resilient most of the world is. And he claims that “good societies” not only persevere but gain strength in times of crises. I found it interesting when Zakaria ranked the quality of governmental responses to the COVID crisis, in descending order, as best in Germany, Denmark and Austria followed by Belgium, Sweden and the United Kingdom which was the worst in Europe. He skips over much of Asia and Africa as not having dependable data, but I think he gives them poor marks. The best non-Western responses came from Taiwan and South Korea, which quickly contained the virus.

But it's the United States that he criticizes the most. We didn't do so well and consumed the most resources in trying. By comparison, the Danes got most things right and should be the model for how we could do things here. The trouble in the U.S., is that we have disjointed government at many levels. It doesn't help that most Americans no longer trust either the federal, or state, or local governments. Zakaria thinks the big divide in the US is not so much

North and South but a deepening rift between those who are urban and rural. So, we bicker and fail to come together in crises.

In the end, Zakaria says, the problem is that Americans must learn that government at any size should be held to the higher standards of good government. To do so, we must take more

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pride in government and less in political conquest. Otherwise, we are just left with a purposeless bureaucracy which tends to bungle things. Ultimately, what Zakaria urges, is what most of us want: A truth based (i.e., trust the science) government that is also less judgmental, kinder, and gentler. It used to be that way here, in the U.S. But that was when we trusted government.

News from the Foundation

By Gregory L. Skuta, MD, Chair, Foundation Advisory Board

The Foundation Advisory Board and staff have finished another challenging year strong and vibrant. We are so grateful to each member who gave back to support Academy programs last year. We raise a glass to you in this new year with hope for health and confidence in the future

ANNOUNCING THE NEW PARKE CENTER

It was my privilege to announce in November that the Academy will name a new conference center at Academy headquarters after former CEO David W. Parke II, MD. The Parke Center is a much-needed facility that will enhance the Academy's ability to host board, committee, industry and other meetings, as well as to build and strengthen relationships with ophthalmic leaders and key partners.

We deeply appreciate our anchor donors who have provided the funding to launch this \$2.5 million campaign: the Ophthalmic Mutual Insurance Co. (OMIC) (\$1 million) through leaders Tim Padovese, Dan J. Briceland, MD, and the OMIC Board of Directors; and philanthropic leaders David E. I. and Molly Pyott (\$250,000). With \$1.25 million left, my wife Anne and I are pleased to join Tamara R. Fountain, MD, George A. Williams, MD, and others with significant gifts. If you would like to join us and be specially recognized, contact Tina McGovern at tmcgovern@aao.org or 415.561.8508.

SUPPORT MINORITY MENTORING

The foundation has launched a [campaign to raise \\$1 million for the Minority Ophthalmology](#)

[Mentoring program](#). This program aims to increase concordance between ophthalmologists and patients by helping qualified students who are underrepresented in medicine become competitive ophthalmology residency applicants. We've raised more than \$200,000 — let's keep up that momentum! Your contribution will play an important part in reaching more patients in a broader spectrum of cultural groups and languages.

NEW CHAIR FOR THE ORBITAL GALA

We are proud to announce Christie L. Morse, MD, as the new chair of the [2022 Orbital Gala](#). Dr. Morse has served on numerous Academy committees, including the Orbital Gala Committee, Foundation Advisory Board (FAB chair from 2013–18 and member 2019–present) and is currently chair of the EyeCare America® Steering Committee. This uniquely fun event will take place in Chicago on Oct. 2 during AAO 2022. We look forward to working with Dr. Morse and her dedicated committee of volunteers to make this year's gala a huge success.

HONOR YOUR MENTOR TODAY

The foundation's [Honor a Mentor campaign](#) provides a special opportunity for donors to pay tribute to those who have made a positive professional impact on our lives while supporting Academy programs. Join George A. Williams, MD; Jane C. Edmond, MD; Cheryl L. Huey, MD; David F. Chang, MD; Tamara R. Fountain, MD; me and others who have honored their mentors. Donate to your fund of choice



Christie L. Morse, MD

and tell us what your mentor or colleague has meant to you.

AN EASY, AUTOMATED WAY TO GIVE BACK

The foundation is pleased to offer you an easy way to support Academy programs. Now, for the cost of a latte a day, you can [make a monthly or quarterly recurring gift](#) and never think about it again while your dollars work on behalf of patients globally.

Thank you again for your continued support of the Academy Foundation. I would love to hear from you. Feel free to contact me any time at gskuta@aao.org.



Dr. Dohlman pictured at age 17 with his father and whippet, "Jack".

Notable Dates in Ophthalmology

By Daniel M. Albert, MD, MS

10 YEARS AGO (2012)

Researchers at Oregon Health Science University reported that new advances in anterior segment tomography (OCT) technology development allow visualizing fine angle structures within the anterior chamber angle of the eye. For example, utilizing high speed and high-resolution Fourier-domain (FD) OCT instruments working at 840nm, can reliably identify Schwalbe's line.

25 YEARS AGO (1997)

Claes H. Dohlman, MD of the Massachusetts Eye and Ear Infirmary at Harvard published his experience with keratoprotheses. These indicated significantly improved results from previous reports.

50 YEARS AGO (1972)

Cornelius D. Binkhorst in the Netherlands devised a new intraocular lens procedure consisting of extracapsular cataract extraction with implantation of his iridocapsular lens into the posterior chamber. Fixation to the capsular remnant was stated to immobilize the lens and protect the corneal endothelium.

100 YEARS AGO (1922)

Insulin was isolated by the Canadians Frederick Banting and Charles Herbert Best under the direction

of John James Rickard Macleod at the University of Toronto.

250 YEARS AGO (1772)

Jean Janin (1731-1799) an ophthalmic surgeon in Lyon published *Memoir et observations sur l'oeil* that described the use of convex lenses to see distant objects. Janin operated with great skill and published observations on cataract, the lacrimal apparatus and binocular vision.

500 years ago (1522)

In Britain at this time, surgery — including eye surgery — was performed by barber-surgeons. It was becoming regulated and organized under royal charters. "Companies" were thus organized that eventually evolved into the Royal Colleges of Surgeons in Scotland and England. Physicians and surgeons united in a single organization in Glasgow, and a college of physicians was founded in London.

1000 YEARS AGO (1022)

The medical school in Salerno, Italy, founded approximately 200 years earlier as the first medical school in Europe, was now prominent. It attracted students from Europe, Asia and Africa and served as a model for medical schools established in Padua, Bologna, Montpellier, and Paris.

SCOPE

The Senior Ophthalmologist Newsletter

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