



# SCOPE

## Congressional Advocacy Day: Teaching Us How and Why to Advocate for Patients

By Laurie Gray Barber, MD

**A**t the American Academy of Ophthalmology, our mission is to protect sight and empower lives, by serving as an advocate for patients and the public, promoting ophthalmic education and advancing the profession of ophthalmology.

One way I accomplish this is by attending the Academy's Mid-Year Forum, which I have done for 30 years now. I started as a councilor representing the Arkansas Ophthalmological Society (AOS), then as regional Council Chair, society president, OPHTHPAC® committee member, OPHTHPAC committee chair, Surgical Scope Fund Committee chair and then as an Academy board of trustee at large.

Initially timed to be a "mid-year" Chicago meeting for practical business and policy updates, in 1998 Mid-Year Forum moved to Washington, D.C., to incorporate Congressional Advocacy Day. At every congressional advocacy

meeting, I have learned critical information that further encourages the superior care of our



Laurie Gray Barber, MD pictured with John Stechschulte, MD during the Academy's 2023 Mid-Year Forum

patients. This year was the Mid-Year Forum's 30th anniversary.

Each year for Congressional Advocacy Day, we arrive in D.C. the evening before our congressional visits. Ophthalmologists begin by poring over the agenda book and written legislative briefing tools while experts advise us on each of the key issues.

This year, we were given four full issue briefs with "asks" for each legislator:

- Physicians Need a Fair and Stable Medicare Payment System
- Delivery of Quality Care to Our Nation's Veterans
- Support Increased Vision Research Funding
- Ease Prior Authorization Requirements

Each state's ophthalmology advocates were scheduled to meet with their lawmakers on Thursday. Each meeting would run about 30 minutes, with ophthalmologists addressing each of the four issues. As representatives for the Academy and our state or subspecialty societies, we strived to personalize our and our patients' experiences, discussing important perspectives with our legislators.

What lawmakers and staff needed to know is how their constituents will be affected by laws and policies.

## Laurie Barber, MD

Our concise stories help to shape perceptions and educate them on the impact of enacted and proposed new laws in their districts.

After each meeting, we offer to assist the legislative staff and lawmakers with any questions or concerns regarding the impact on ophthalmology, medicine in general and most importantly, our patients. We shared emails and phone numbers and wrote thank you letters, then followed up with letters to update each legislator as to changes that might occur. Feedback and thank you notes are provided to the Academy via an online app.

Over the years, several of Arkansas's lawmakers and staff have stayed in contact with me. A longtime House representative caught my eye while he rode in a large parade, and he hollered out, "Hello to Dr. Barber!" Senators have called, emailed and made the effort to be present in person on Congressional Advocacy Day.

Most recently, our senior Sen. John Boozman, OD, R-Ark., directed his staff to accompany us to the underground Senate railroad and the ornate Sen-



Dr. Barber pictured (left) with the Arkansas delegation on their way to the Capitol during Congressional Advocacy Day

ate Reception Room, where he met with us for 30 minutes between Senate votes.

Although we did not broach the Department of Veterans Affairs' plan to develop national standards of practice with him, he has always supported Medicare payment system stability, vision research money requests and the department's research into traumatic brain injuries in veterans.

Finding commonality with your lawmakers assists in cementing a working relationship. Continuing

to communicate with your legislators locally and nationally encourages them to regard you as their expert on eye care. You may not be a member of their party, nor agree with all the issues they champion. But it's likely that they will want to help in furthering excellence in ophthalmic care for all our patients. Having a lawmaker's ear can make the difference between premium vision or blindness.

As senior ophthalmologists, we may now have more time to advocate for our profession. Conflicts of interest tend to disappear once we become retired. Our wisdom will likely be welcomed by our fellow ophthalmologists, as well as by lawmakers and their staff.

It is time to knit together our science education while advocating for our patients by developing relationships with key policy makers. Consider joining your colleagues next year at Mid-Year Forum 2024, April 17-20!

### WANT TO GET INVOLVED?

- The Academy has some tips on ways [you can become an advocate](#).
- Get involved in your [state society](#).



California ophthalmologists meet with U.S. Representative Judy Chu, PhD, during Congressional Advocacy Day





## Us vs. Them

By Alfredo A. Sadun, MD, PhD

**W**e love the idea of altruism. Stories of self-sacrifice inspire us.

I remember hearing that old wildebeests in Africa willingly fling themselves into a river crossing so that they got devoured by the crocodiles in wait, allowing the young wildebeests to cross safely. It turns out that was the misinterpretation of an old *National Geographic* clip. At the end of this editorial, I'll give the modern interpretation.

In Charles Dickens' "A Tale of Two Cities," the character Sydney Carton nearing his end says, "It's a far, far better thing I do today than I have ever done," before he takes someone else's place in the guillotine. We cherish examples of altruism whether from the animal kingdom or from a piece of literature. Depending on your worldview, altruism reflects our godly souls, is a demonstration of true love, shows off the angels of our better nature or reflects the hardcore mathematics of population genetics.

Charles Darwin recognized that altruistic behaviors might put an animal at a disadvantage in terms of their individual fitness. However, he proposed that such behaviors could evolve if they provided a net benefit to the group or species as a whole. As an example, vervet monkeys give alarm calls to warn their group members of the

presence of predators. Although these loud sounds put the caller at a higher risk of detection by the predator, they also increase the survival chances of the other vervets.

Darwin called this group selection, where traits that benefit the group can evolve even if they are detrimental to the individual. Since Darwin was not aware of genes, there were problems with this formulation that could not be better formalized, and he was uncomfortable with the concept.

Then genes were discovered and, about 100 years later, the mathematically inclined British biologist John Burdon Sanderson Haldane famously said, "I will gladly give my life for two brothers or eight cousins." Had he included "four uncles" his math would have been even more obvious. He wasn't speaking of family love, but of kin selection. This is part of the science of social biology and largely explains many forms of altruism that were thought to be inexplicable under the old evolutionary notions of survival of the fittest.

There is great beauty that comes from an understanding of the selfish gene in evolution, and in understanding that altruism is not an aberration. Rather, altruism is a highly useful trait that is selected for. But we also have to understand the same coin's darker side. We live in a world of manipulation of pseudo kinship as a political, social and military weapon. In other words, we can easily fall prey to false representations of kinship.

Shortly after Haldane, Irish mathematician and physicist William Rowan Hamilton took this further with the concept of inclusive fitness. Inclusive fitness combines an individual's direct fitness (the number of offspring they produce) with their indirect fitness (the number of additional offspring produced by their relatives due to their altruistic actions). Hamilton's rule is that altruistic behaviors will evolve if the benefit to the recipient (B) multiplied by the relatedness of

the recipient (r) outweighs the cost to the altruist (C), that is if  $rB > C$ . And, indeed, altruistic behaviors are more common among closely related individuals, as they share a greater proportion of their genes. But this can get rather complicated.

We are sometimes forced to decide between what is good for us and what is good for our extended family. In order to make the proper calculus, we have to know whether there are relationships, how many are involved and how close are the relationships. If we were like most animals, this would not be so problematic. Most animals use smell to identify true kinship. This is one reason that in most animals there is a huge investment of genes and brain tissues to serve the olfactory system. This remarkably sensitive and discriminating sense of smell can distinguish between the various shades of kinsman since it relies on odorant molecules that vary by genetics.

But primates, and most especially humans, have a less discriminating sense of smell and they must rely on their cognitive abilities instead. And they can do this with remarkable accuracy. Baboons, for example, keep track of relations and act accordingly. In fact, baboons keep track of which males were around females at the time they were in estrus before pregnancy. Good recall is key. This has proven to be calculated very accurately as to whether the baboon was the father as evidenced later by this baboon's investments in tending to the young. But calculating kin relationships based on behavior is very tricky because these behaviors can be manipulated. Indeed, baboons have been observed to pretend to be related when the dominant male is involved. These are political manipulations that can help them mitigate the violent tendencies of the aggressive dominant males who will then go easy on their close kin.

The thing is, we, as humans, manipulate these feelings to a much greater extent. It seems that every

## From the Editor's Desk

newspaper article, every presentation on *CNN* or *Fox News*, plays up the distinctions between us and them. The narrative describes a tension between our side and the other side whether the sides are political parties, urban vs. rural, northern vs. southern States or the U.S. vs. other countries.

Indeed, in doing so, these agencies go to ridiculous lengths to demonize “the other.” That gets people worked up, that lowers our guard in accepting propaganda and, mostly, that gets us so invested that we keep coming back for more. Which, of course, is the point for programs that want to sell time to advertisers. But, for some susceptible audience members, it also incites to violence. Like the baboons that act very aggressively when protecting their own tribe, humans, under the influence of this news manipulation, become capable of extreme violence such as we saw occur in the Jan. 6 attack on the U.S. Capitol. Recently there was another mass shooting at a college campus, and the shooter had no personal connection with any of the victims or even the college. Every newscaster was asking, “why.” I think that the answer is that this crazy shooter saw the students as alien to his own experiences and felt no kinship with them. They were “them.” He didn’t have the sense of smell that many animals do that would have toned down his rage by recognizing kinship.

But you don’t have to just look at the crazies acting out to see how this manipulation of kinship happens. In the military, there has always been the doctrine of the “band of brothers.” Shakespeare put this in the Saint Crispin’s Day Speech of Henry V. Men are willing to die by the side of their “brothers.” Stalin used to use the term “comrade” until the Germans attacked Russian soil. He then switched to the use of the term “brother” in patriotic



speeches asking for sacrifice on the battlefield. And it worked. I guess I’m not above this type of manipulation myself. I have often likened my lab and other teams that I’ve led as being like “family.” While, of course, I’ve not expected people to die for each other, I may have sensed that more sacrifice of time and effort would be made for “the family.”

The flip side, of course, is to demonize the enemy. At times of social upheaval and war, propaganda does a lot to define the “them” as barely human. In WWII, both sides resorted to using extreme terms such as “cockroaches” and “vermin” to sever the connection of kinship we might have felt for the enemy. This is how political and military leaders destroy our humanity and instincts to be merciful.

Has the internet brought about a resurgence of tribalism? I think so. At minimum, we may be seeing the tide going out on the recent chapter in human history whereby people connected more with the “others” by learning of them from reading books and traveling. The internet minimizes these connections with superficial tropes about “the other.” As always, we tend to fear most those we don’t understand.

That is one of the beautiful things about being an ophthalmologist and feeling kinship with other ophthalmologists. The Academy

has done a lot to foster this sense. We feel connected by attending the Academy meetings and, I hope even these issues of *Scope* emphasize what other SO members have done professionally or are doing in their avocations.

We learn that other ophthalmologists feel and react similarly to the same pressures and challenges we all face, such as confronting retirement. We are in it together and not only is that informative and consoling, but it gives us cause to treat each other well. We may be inclined to give and receive small favors. Like monkeys grooming each other, it’s not about the fleas, it’s about the reassurance that we are all related. After a long career and many friends and acquaintances, I get that all the time, and it’s very heartwarming.

By the way, what inspired this editorial subject was that I recently read that *National Geographic*’s extensive filming of wildebeests crossing crocodile-infested rivers have been more carefully analyzed. This analysis showed that the wildebeests did not fling themselves into the water and into the mouths of crocodiles as an act of altruism. Rather, these wildebeests were identified by other wildebeests as old and lame, and as easy victims, were pushed and shoved against their will into the waters. This was not altruism. This was nature, red in tooth and claw. But we love the idea of altruism.



# From YO to SO: Mid-Year Forum Through the Years

Tamara R. Fountain, MD

**T**wenty-seven. That's the number of Mid-Year Forums I have attended.

When I attended my first one in 1996, the whole concept of a mid-year leadership summit was still new. H. Dunbar Hoskins, MD, new in his role as Academy executive vice president, envisioned a gathering of rank-and-file member physicians along with Academy leaders to discuss and address pressing issues of the day.

It started out in Chicago, a geographic center and convenient transportation hub. It moved to Washington, D.C., in 1998 when it became clear that ophthalmology's most pressing issues lent themselves to strategic advocacy at the federal government level.

I got an invite to my first Mid-Year Forum in the '90s because I was a member of the Academy's nascent Young Ophthalmologist (YO) committee—evidently, Academy leaders wanted to hear what we trainees had to say!

Getting an all-expense paid weekend away during fellowship training was an almost intoxicating honor at this stage in my young career. All seven of the YO

committee members were seated together at a reserved table for the Thursday night banquet at the Mayflower Hotel, Mid-Year Forum's home in Washington, D.C., in those early years. I will always remember the giddiness I felt when *the* Dunbar (like Cher or Madonna he only needed his first name), said my name aloud as he introduced the members of this new committee to the gathered ophthalmic dignitaries in the ballroom.

I have worn different hats in my attendance over the years—YO Committee, Ethics Committee, Ophthalmic Mutual Insurance Co. board member, Health Policy Committee, Secretary of Member Services, ASOPRS president and in 2022, Academy president. I've brought both my children when they were studying government in the fifth grade. I've lobbied on Capitol Hill, learning the hard way that rubber-soled shoes handedly trump fashion when logging 10,000 steps through the halls of Congress.

I remember the days when there were chartered buses that took us to and from the Hill (we now get prepaid Metro cards and a map), when security tightened

after 9/11 and when the Capitol dome underwent major renovations that ruined our group photos for a couple of years.

Every three to four years, our April dates would coincide with peak cherry blossoms season. These were the years that invited each of us to linger a bit longer or take the long walk back to the hotel, thus carving out time to cherish this yearly rite of spring and passage. There is no better time to be in our nation's capital than when the cherry blossoms are in full display. And it never gets old.

This trip in 2023 was a bit different than my first trip. For one (and obviously), I'm no longer on the YO committee. In fact, I was recently recruited to the Senior Ophthalmologist (SO) Committee in my first year of eligibility. How's that for a career arc? And no, even though Academy leaders may care what we SOs have to say, it's no longer all-expense paid. (Then again, I'm also no longer drawing a fellow's salary.)

This year during the banquet my name was called again — this time as a past president. It was still the honor that it was 27 years ago but the feeling of figurative intoxication I felt then is now instilled the old-fashioned, literal way: with a good lemon-drop Martini.



Tamara R. Fountain, MD, pictured with her children , Natalie in 2003 (left) and Nicholas in 2004 (right)

# Building Relationships Between YOs and SOs

By John Stechschulte, MD

I attended the Academy's Mid-Year Forum 2023 in Washington, D.C., something that I have done many times.

For years, serving as an Academy councilor representing Ohio and later as a trustee on the Academy's Board, I have enjoyed this amazing experience that has allowed me to serve the nation's ophthalmologists and the Academy. This is a meeting that brings close to 500 volunteer ophthalmologists to advocate for our patients and for our profession. If you have never attended this event held every April, then plan to attend next year. It may also be your chance to experience walking beneath the [cherry blossoms at the Tidal Basin](#).

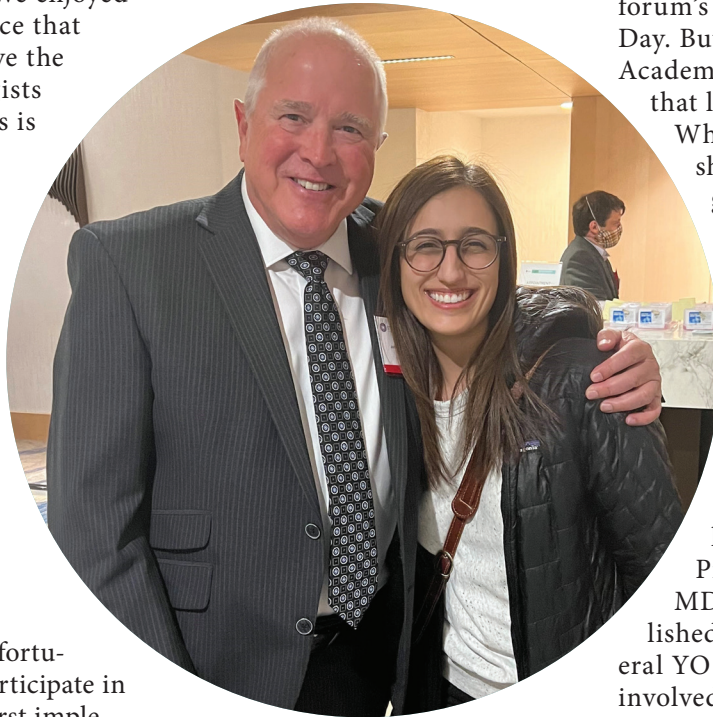
This year, I was very fortunate to be invited to participate in an amazing program first implemented in 2015 called L.E.A.P. (Leadership, Engagement, Advocacy, and Practice Management) Forward. It's a joint effort sponsored by the Academy's Young Ophthalmologist (YO) Committee and the Secretariat for State Affairs.

The L.E.A.P. Forward program is presented annually to Advocacy Ambassadors. They are residents or fellowship trainees sponsored to attend the Mid-Year Forum by state, subspecialty/specialized interest societies and training programs. It is designed to teach YOs about the importance of Leadership, Engagement, Advocacy, and Practice Management (L.E.A.P.), so we are laying the groundwork for the future.

Academy YO Committee Chair Andrea Tooley, MD, and com-

mittee member, Meron Haile, MD, expertly led the program.

A highlight of the meeting for me was being offered the opportunity to mentor one of the residents in the Ambassador mentor program: Mah-



John Stechschulte, MD and mentee, Mahsaw Mansoor, MD

saw Mansoor, MD, a second-year ophthalmology resident at the University of Iowa, who was one of 20 ambassadors paired with a mentor.

At first, I wondered how I could advise an Iowa ophthalmology resident. After all, she has already benefited from daily teaching and mentoring by wonderful leaders in Iowa, like Keith Carter, MD, and Tom Oetting, MD. How much could I have to offer a smart, young, energetic, involved and evolving future leader like Dr. Mansoor?

Mentoring has become a high priority for the Senior Ophthal-

mologist Committee, which I serve. Although we all have some opportunities to influence the next generation of doctors, having a specific mentee is a more personal responsibility that I take seriously. To start with, Dr. Mansoor and I began talking by phone prior to arriving in D.C. I learned that she grew up in Cleveland, so I told her she would be welcome to join our Ohio delegation during the forum's Congressional Advocacy Day. But the Iowa physicians and Academy staff advised against that last-minute change.

When we did meet in D.C., she was still was dragging her luggage into the meeting. I was able to introduce her to key Academy staff members, Gail Schmidt, Rayland Asuncion, Neeshah Azam and Rebecca Hyder.

Showing her poise, Dr. Mansoor introduced herself to the Academy President Dan Briceland, MD, and had quickly established friendships with several YO leaders. She is already involved in the American Medical Association, as is her spouse who also has advocacy goals. Dr. Mansoor will soon share the PowerPoint presentation about the forum with me. She and her fellow resident Joanna Silverman, MD, will present it to the Iowa ophthalmology residents when they return. Although I was nominally her mentor, I know that I will continue to learn from Dr. Mansoor. Although my assignment as her mentor is for one year, I know she and I have begun a lifelong friendship.

*Share this link with the YOs whom you work with: <https://www.aao.org/mid-year-forum/advocacy-ambassador-program>. Your physicians and their patients will be grateful to you for improving patient care and strengthening our profession.*



# A Surprising Connection Between the History of Braille and Folsom State Prison

By Aubrey Minshew, MA

**T**he United Nations recognizes World Braille Day each year on Louis Braille's birthday, Jan. 4. For many years the inventor's reading and writing system for the visually impaired has been an invaluable communication tool.

Last year for World Braille Day, I took a deeper look at the little-known connection between Braille and those incarcerated at California's Folsom State Prison.

"Folsom State Prison" can bring up a wide variety of associations. For instance, one might be inspired to hum a few bars from Johnny Cash's legendary live album recorded there. Or one might rattle off a partial list of famous (or infamous) people who were incarcerated there in the past: Charles Manson, Eldridge Cleaver or Suge Knight. Perhaps more personally, Folsom might bring up an emotional connection to a friend or family member that spent time there, as a prisoner or as a guard. Not many people hear the name Folsom and immediately think of Braille. But perhaps they should.

My connection dates back to an opportunity I had to visit Folsom State Prison in the fall 2018.

Nestled in green hills north of Sacramento, Calif., the prison is a series of beautiful stone buildings perched on a bluff over the



[Coin Commemorating the Centennial of Louis Braille's Death, 1952](#)

American River. Inside the prison, there is a completely self-sufficient world of incarcerated people and prison employees, all living separated from the outside.

As a person with no personal experience or connections with the penal system, all of this was rather astonishing to me.

But the most surprising thing I saw at Folsom was a warehouse full of books in Braille and a small battalion of inmates typing away on Perkins Braille's.

Braille is one of the best-known aids for people who are blind or have low vision. Braille is not a language like English or American Sign Language, but a code to translate any language into a series of raised dots that can be read by running one's fingers across these raised dots. Developed in 1829, Braille writing has gone on to become the accepted standard for creating reading material for people who are blind.

Braille can be used to convey literature, mathematical equations, scientific formulas, and even sheet music. American Braille translators undergo rigorous training from the Library of Congress's National Library Service for the Blind and Print Disabled. As of 2017, there were only about 600 people certified in literary Braille, about 400 people certified in Nemeth (Braille for science notation), and only 30 people certified in music Braille.

Astonishingly, one-tenth of those specialized translators are inmates at Folsom State Prison. Under the California Prison Industry Authority, people incarcerated at Folsom are allowed to pursue all of the Library of Congress's Braille certifications, which gives those incarcerated both an opportunity for work in a quiet space outside of the

## Aubrey Minshew, MA

hustle and bustle of the prison yard and acquire a set of marketable skills they can use after they complete their sentences and return to the outside world.

Since 1989, many people at Folsom prison have taken to Braille translation with great enthusiasm. In fact, there are only 12 individuals in the world today who can claim to hold all three of the Library of Congress's certifications, and three of those people are presently incarcerated at Folsom.

In 2018, I had the opportunity to speak with one of those three people. Layale Shellman, who is currently serving a life sentence for a murder he committed in the 1970s, achieved six separate Braille certifications in six years. When I met him, Shellman was hardly what one might expect with a convicted murderer. I found him to be a very kind and unassuming person, a short man with a head full of white hair, and, as I could observe, an expressively devout Christian.



Folsom State Prison, California



[Lavender Braille Writer](#), c. 1962

Braille has now become his passion and life's work, and he often develops pen pal relationships with blind people on the outside. Often, these blind people send him requests for new books or pieces of music that they would like to learn. He did not fit my mental image of an incarcerated person, and I doubt that he fits squarely into many people's perceptions of an accessibility professional.

There exists a patchwork of professionals and practitioners scattered around the country who work together to provide accessibility aids and lifestyle care for people with low vision and people who are blind. The Braille translators at Folsom State Prison are just one part of this greater tapestry but they probably contribute to this community with more enthusiasm as anyone outside the prison walls.

My visit to Folsom State Prison gave me a much more nuanced picture of incarcerated life and expanded my associations with the people of Folsom. I think of Layale Shellman and the other Braille translators any time I see Braille outside prison walls, and I am grateful to have had the opportunity to widen my understanding of just how that Braille got there.

*If you want to learn more about Louis Braille, [check out his biography](#) on the website for the Academy's Truhlsen-Marmor Museum of the Eye®. For more Braille-related artifacts, use the "Collections Search" function on the museum website or the museum's mobile app, available for free from [Google Play](#) and in the [iPhone app store](#). All images courtesy of either the Truhlsen-Marmor museum collection or of Aubrey Minshew, MA.*



# What We're Doing Today — Meet Radio Enthusiast, Arnold Rabin, MD

By Alfredo A. Sadun, MD, PhD

**A**rnold R. Rabin, MSEE, MD, completed his medical school training at Boston University and then went on to do a residency in ophthalmology at the Massachusetts Eye and Ear Infirmary (MEEI) of Harvard Medical School.

This is where we met as I was a PGY2 in 1979 when he was a PGY3. I remember Arnie as a friendly and studious resident. He was interested in electrophysiology and retinal degenerations that probably presaged one of his important contributions which was a paper in *Nature Genetics* in 2000 on Stargardt Disease. However, this interview concentrates on his interesting avocation. So, I pick up the interview here.

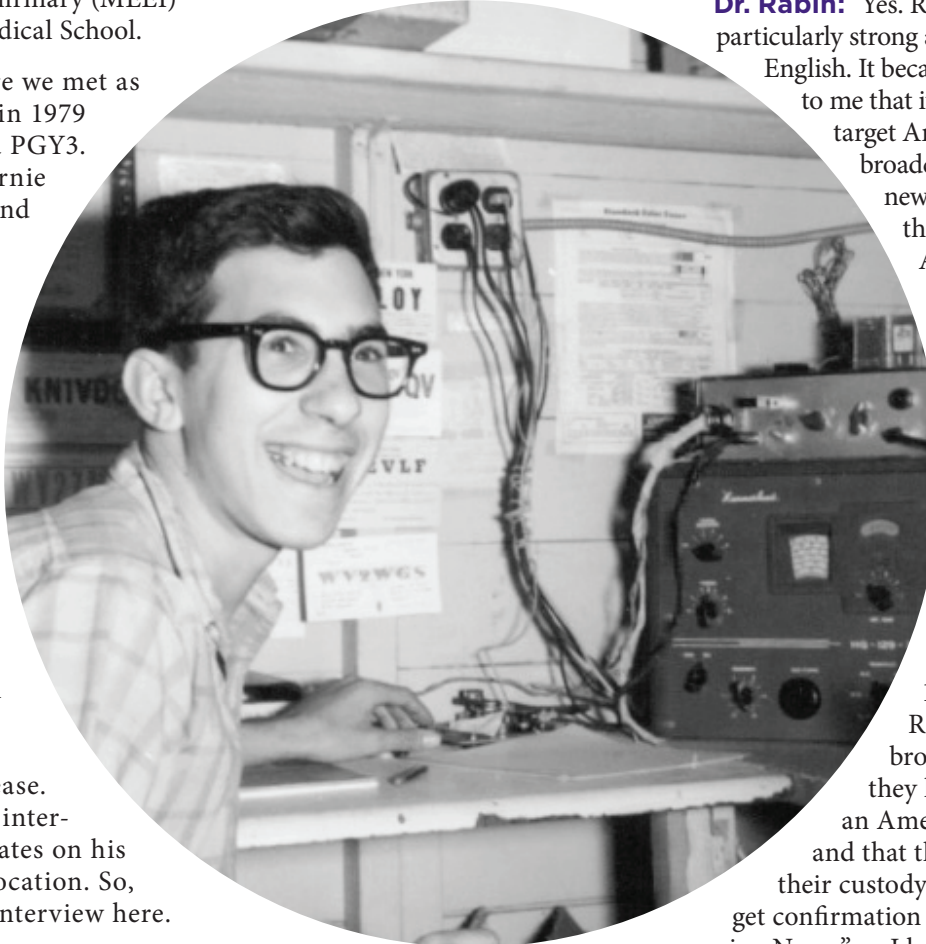
## Alfredo A. Sadun, MD, PhD:

Hi, Arnie. Much has happened in your life since we shared patients at MEEI. But let's back it up to when you first became interested in ham radio. How old were you?

## Arnold R. Rabin, MSEE, MD:

Hi, Alfredo. I was about 12, and I tried to build a crystal radio. I found that experimenting with a 1N34 Germanium diode, a crystal earphone, and using a cold-water pipe in our house (as a ground), I could hear a local radio station WOR in New York. Just by holding one terminal of the earphone to the pipe, the other to the diode,

and the diode back to the pipe, I could hear radio broadcasts without having to rely on complicated wiring diagrams or any source of power. It was an excit-



Dr. Arnold Rabin, WN2ABM, at his Novice Radio Station in May 1963. The homebrew transmitter sits atop a Hammerlund Hq 129X receiver. His left hand is on a telegraph key

ing discovery for me at that time and left a lasting impression.

**Dr. Sadun:** I can imagine. You tapped into an invisible energy and information source. I'm sure you wanted more.

**Dr. Rabin:** Well, yes. When I was 13, my father bought me a

Grundig Majestic imported German radio that had the frequency listings of all the world cities that you might be able to hear. It was exciting for a child who knew little or nothing about radio, to be able to turn a dial and in so doing, hear voices from around the world.

**Dr. Sadun:** Was there one place you were particularly attracted to?

**Dr. Rabin:** Yes. Radio Moscow was particularly strong and in perfect English. It became apparent to me that its goal was to target Americans and to broadcast its view of the news in the same way that the Voice of America or Radio Free Europe broadcasted to the USSR and Eastern Europe.

## Dr. Sadun:

What was the most memorable broadcast?

## Dr. Rabin:

In 1960, I heard Radio Moscow broadcast that they had captured an American spy plane and that the pilot was in their custody. But I couldn't get confirmation on "CBS Evening News," so I had to consider that this was just Russian propaganda. It only came out later that an American U2 spy plane flown by Francis Gary Powers, a U.S. Air Force pilot, had been shot down while overflying the Soviet Union. The pilot managed to bail out and survive and was in the custody of the Soviets. Since that experience, I've always gone to great lengths to verify the accuracy of sources.

**Dr. Sadun:** And the next step in your education in electrical engineering?

**Dr. Rabin:** The following summer, my family vacationed in the

## Arnold Rabin, MD

Catskills where the lifeguard was operating what looked like a radio station. This was Irving Binger, a man in his 60s who turned out to be a New York City High school teacher. He was operating a radio transceiver and speaking to people

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*The most amazing thing was to listen to the receiver with headphones and to hear a station calling me “WN2ABM” in Morse code. I was on top of the world.*

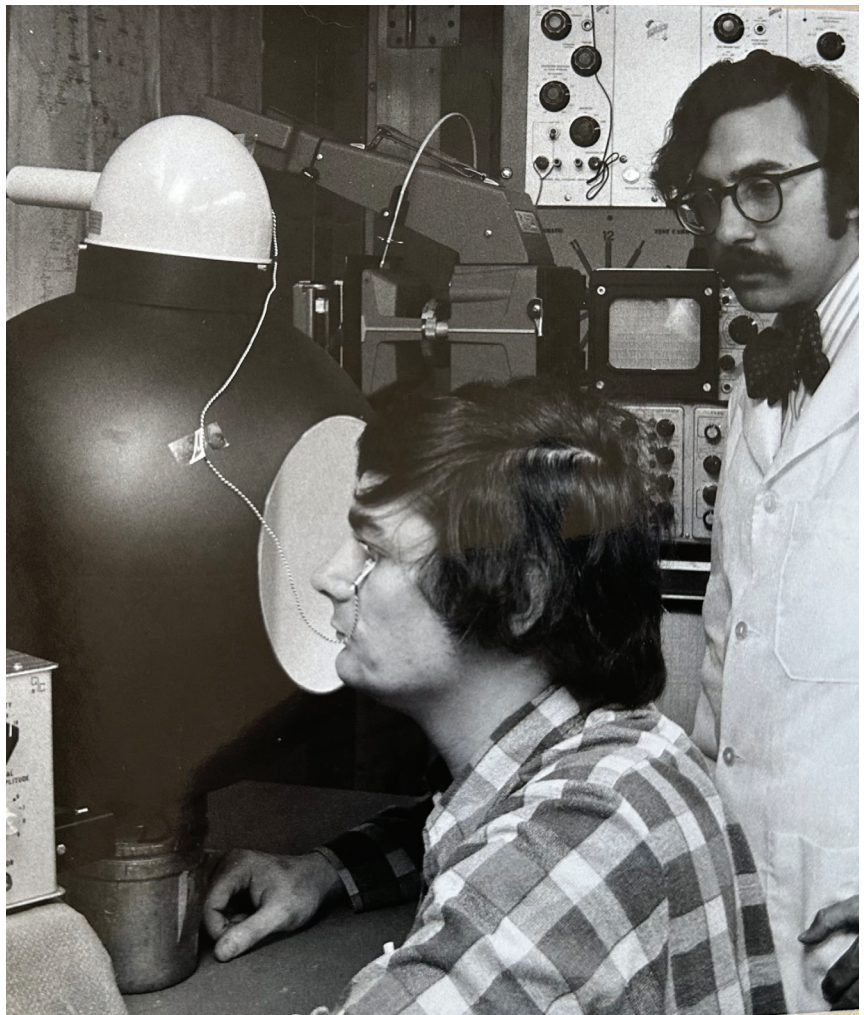
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in Rome! He had strung up a wire antenna over one of the structures near the pool. There he was, sitting in his lifeguard attire while in conversation with people all over the world! Amazing! Fantastic!

When I returned to the ninth grade in 1960, I discovered that one of my classmates had a ham radio station. He taught me the logistics of getting a novice amateur radio license from the Federal Communications Commission (FCC). To be licensed, you had to send and receive Morse code at five words per minute and pass a written examination. The license permitted one to transmit only by Morse code using up to 75 watts of power. I purchased a used Hammarlund HQ-129X receiver for \$75.

**Dr. Sadun:** So, you were ready to go on air?

**Dr. Rabin:** Not quite. That was just the receiver. To complement it, I built a Homebrew Novice transmitter by myself from a magazine called *Radio TV Experimenter*, which had a picture of a 75-watt transmitter for Novice



Dr. Rabin performing an electroretinogram at Albany Medical College on the system he built as a first-year medical student in 1973

amateur radio operators. This contained two tubes and transmitted in Morse code only. This was not a kit; you had to build it from scratch. The chassis consisted of a U.S. Army ammunition tin, which was army surplus.

Once I got my license, I was good to go. The most amazing thing was to listen to the receiver with headphones and to hear a station calling me “WN2ABM” in Morse code. I was on top of the world. Every waking hour that I was not in school or doing homework, I was down in our basement, in a modified storage workshop, on the air, talking to people from all over the world using Morse Code.

Amateur radio telegraphy follows a strict protocol. Call letters, name, location and signal

strength. Then we talk about our equipment and our lives. In a few months my speed was over 13 words a minute and I passed my General license exam and became WB2ABM. I met ham radio operators in every state and a few countries.

In a few months, my speed went from five words per minute to over 13 words per minute sending and receiving Morse code.

**Dr. Sadun:** How do you talk about the frustrations of being a teenager at 13 words a minute?

**Dr. Rabin:** I had to obtain a transmitter that could broadcast audio in addition to Morse code. I purchased a HeathKit Apache transmitter kit. (HeathKit was a company that provided many different types of



## Arnold Rabin, MD

electronics in kit form that you would have to assemble.)

**Dr. Sadun:** Here's a hard question that I always ask. How did this experience impact on your career as an ophthalmologist?

**Dr. Rabin:** Amateur radio and experience with electronics led to electrical engineering at the City College of New York (CCNY), and a job at RCA Aerospace Systems in Boston, where I was responsible for the calibration and performance of the Rendezvous Radar on the Lunar Excursion Model of the Apollo 11.

Then while completing my master's degree at Northeastern, I received a phone call inviting me to interview for a position in Eliot L. Berson, MD's, lab in the department of ophthalmology.

He hired me on the spot, and I was appointed to the Harvard Medical School Faculty as a Research Associate in Electrical Engineering.

**Dr. Sadun:** Dr. Berson was an exacting man. How was it working for him full-time?

**Dr. Rabin:** I was 25, Dr. Berson was 34, and he had just started this laboratory at the Harvard School of Public Health. Eliot had observed as a fellow that when electroretinograms (ERGs) were decreased in amplitude in patients with retinitis pigmentosa, they were also delayed in implicit time. However, Stephen J. Fricker, MD, also at MEEI and an engineer, had reported that implicit times were shortened by RP. I tried to resolve this disagreement.

Upon reviewing Dr. Fricker's paper it was apparent that he was measuring time and amplitude using polar coordinates. The angle he interpreted to be an increase of phase by 30 degrees was actually a decrease by 390 degrees.

**Dr. Sadun:** What happened?

**Dr. Rabin:** Electroretinography was still in its infancy. I wrote

the first published description of a calibrated state-of-the-art system for recording ERGs. It was published in the *Archives of Ophthalmology*.

**Dr. Sadun:** Any other big victories?

**Dr. Rabin:** I got to know the members of the Department of Nutrition well, particularly K.C. Hayes. I offered to measure ERGs on any of the animals that he thought might have eye problems associated with deficiencies of different nutrients. One day K.C. called me and asked me to examine a group of cats that were being fed a semi-purified diet.

After dilation I examined them with an indirect ophthalmoscope. All of the cats fed the diet had lesions in the area centralis, which is the area in a cat's eye which is comparable to the macula in the human eye.

I developed a method for recording rod and cone ERGs from cats. I looked at five cats, and all of



Dr. Rabin (center) at his home in Wakefield, Mass. in 1979 explaining modulation to his residency partner, Henry Kriegstein, MD, (left) and Dr. Ni (right)



## Arnold Rabin, MD

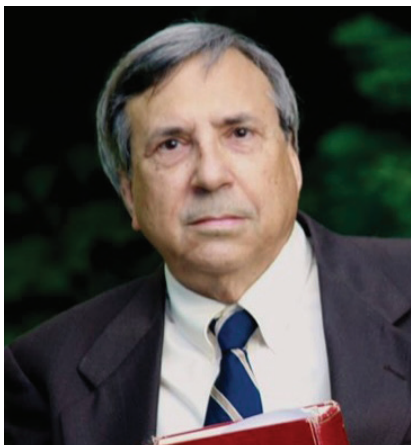
them had lesions at different levels of progression, depending on how long they had been on a diet in which casein had been the sole source of protein. I recorded ERGs from these cats, and they were all decreased in amplitude (both rods and cones). There was no question that these cats had developed a retinal degeneration due to their diet.

Hayes realized that casein, the sole protein source in the cats' diet, lacked taurine. That spring after starting medical school, I submitted four papers in one at Association for Research in Vision and Ophthalmology (ARVO) on a new nutritional model of retinal degeneration.

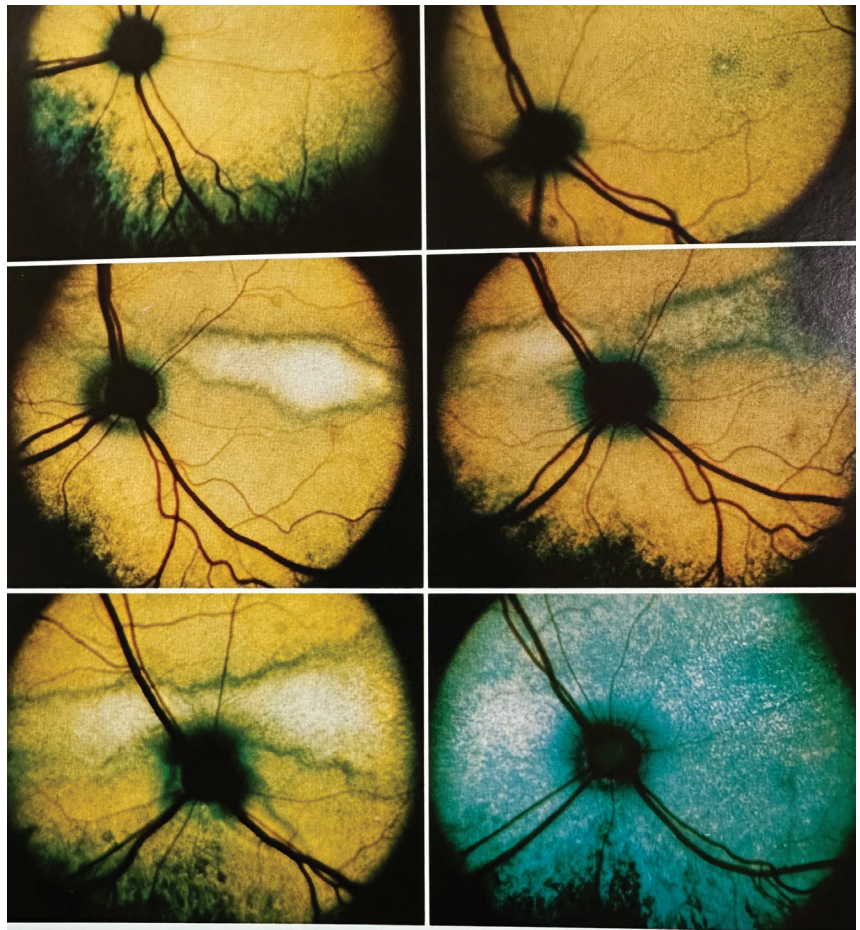
Subsequently taurine has been added for parenteral nutrition for humans and in September 2022, the Food and Drug Administration approved the use of taurursodiol as a new treatment for amyotrophic lateral sclerosis (ALS), so I think it's fair to say, that the implications of this study were very significant.

**Dr. Sadun:** So, you went to medical school as a technical consultant for electrophysiology? Did that determine ophthalmology as your main interest?

**Dr. Rabin:** Not entirely. I was interested in everything, so I did a rotating internship which included neurosurgery, emergency medicine



Dr. Arnold R. Rabin, MSEE, MD



**Fig. 1.** Fundus photographs of the left eye of a control cat fed a normal commercial diet (A) and cats fed the semipurified diet (B through F). All cats fed the semipurified diet developed retinal degeneration: early stage, photograph B; moderately advanced stages, photographs C, D, and E; and advanced stage, photograph F. In each cat the findings were symmetrical in both eyes.

Fundus photographs of five taurine-depleted cats showing various stages of retinal degeneration. The normal control is upper left.

Photo: *Investigative Ophthalmology*

and even obstetrics-gynecology. My internship made me realize how fortunate I was to have a residency in ophthalmology.

**Dr. Sadun:** What were your formative experiences at MEEI?

**Dr. Rabin:** As a second-year resident at MEEI, I met Shirley Wray, MD, our neuro-ophthalmologist. She offered me a stipend to run the visual evoked potentials (VEP) laboratory that she had in the Warren building over at Massachusetts General Hospital.

At about this time, Felipe I. Tolentino, MD, at the Retina Associates asked me to record ERGs for a study on the toxicity of intravitreal Miconazole.

While on the eye pathology service I worked alongside Dr. Chuo Ni. Dr. Ni was a visiting scholar from Shanghai who had suffered a great deal due to the Cultural Revolution of Mao. Dr. Ni was sent to work on a rural farm after having been imprisoned. Ni had extensive experience in eye and general pathology. He expressed an interest in the radio station I had in Boston because it was forbidden in China. In 1984, Dr. Ni arranged for me to visit Shanghai and lecture on electroretinography.

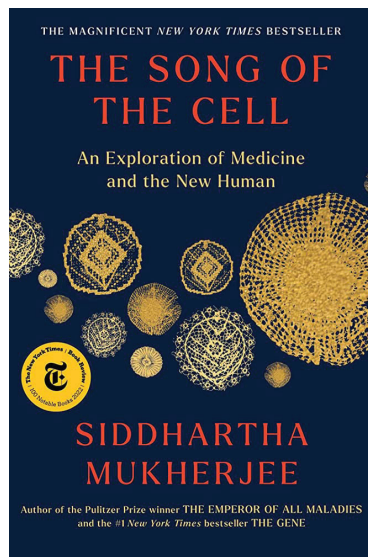
In summary, I see myself primarily as an engineer. I chose ophthalmology because it employs more technical knowledge and engineering precision than other specialties.



# What We're Reading This Spring, 2023

Book Review Editor, Robert L. Stamper, MD

Senior ophthalmologists share the best of what they're reading this spring. Share what you're reading and send your review to our book review editor, Robert L. Stamper, MD, at [scope@aaao.org](mailto:scope@aaao.org).



## *The Song of the Cell: An Exploration of Medicine and the New Human*

By Siddhartha Mukherjee

Reviewed by Susan Ryu, MD

Author Siddhartha Mukherjee takes the reader through an enthralling story of discovery regarding the cell, the basic unit of life, which he describes as having “touched and radically transformed biology, medicine, and our concept of humans.”

Along this journey of discovery, we learn about the organization of cells, division of cells, immunology of cells, and tampered cells, impacted by viral transformation or mutations. Woven into this biological story is an equally revealing and inspiring story of dedicated scientists, researchers, and patients who have contributed to our better understanding of biology.

One of the many inspiring examples is the story of Emily, 7, who was diagnosed in May 2010 with acute lymphoblastic leukemia (ALL). Six

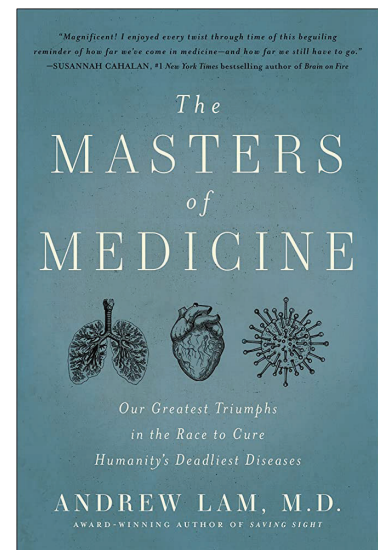
months after undergoing a grueling regimen of chemotherapy, she relapsed and was placed on a bone marrow transplant list. Her disease progressed while waiting for a suitable donor. She was enrolled in a trial. Her T cells were extracted, grown outside her body, treated with gene therapy and then were reinfused into her body to fight the cancer cells.

On the third day of treatment, she developed raging fevers and multi-organ failure, causing her to slip into a coma. Her blood test showed 1,000 times the normal level of cytokines, mostly interleukin 6. Fortunately, she was treated with a new therapy that had just been approved. She woke up after two days. Her bone marrow biopsy at day 23 was clear of cancer cells. She has remained disease free to this day.

For those of you who have wondered about the advances in cell biology but were turned off by

*Woven into this biological story is an equally revealing and inspiring story of dedicated scientists, researchers, and patients who have contributed to our better understanding of biology.*

the complexity of the concepts, this author provides a captivating guide into the subject, which he makes eminently readable and understandable. Equally important, he describes how our modern understanding of the cell is blazing new trails in medicine and improving life for many.



## *The Masters of Medicine: Our Greatest Triumphs in the Race to Cure Humanity's Deadliest Diseases*

By Andrew Lam, MD

Reviewed by J. Kemper Campbell, MD

The confusion and mixed messaging of our public health officials during the Covid-19 pandemic has resulted in a loss of confidence by the American public in the medical profession. Now the most significant book to be reviewed in this space should reverse this misperception.

“The Masters of Medicine” by Andrew Lam, MD, restores the lost faith in the integrity of men and women whose aspirations were to improve the lives of all fellow humans. The book describes the innovators who risked their professional reputations and sometimes their lives to advance our medical knowledge to its present state.

Dr. Lam, who majored in history as an undergraduate at Yale and is a retinal surgeon in Massachusetts, includes an extensive bibliography, copious notes documenting his conclusions, and appropriate vintage photographs. He has also authored two novels, “Two Sons of China,” and “Repentance.”

His new book chronicles the remarkable but true stories of those unique individuals who have helped increase our average life expectancy from 48 years in 1900 to our pres-

## What We're Reading

ent 78 years. The seven chapters are organized into the deadliest afflictions which have affected mankind from past centuries to the recent pandemic and the progress made in eradicating each one.

The first chapter deals with heart disease which still accounts for 25% of all deaths in the U.S. Fittingly, it begins with Dick Cheney

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*The rivalry between the discoverers of insulin is mirrored by other medical pioneers. France's Louis Pasteur and Germany's Robert Koch raced each other to find treatments for new deadly microbes.*

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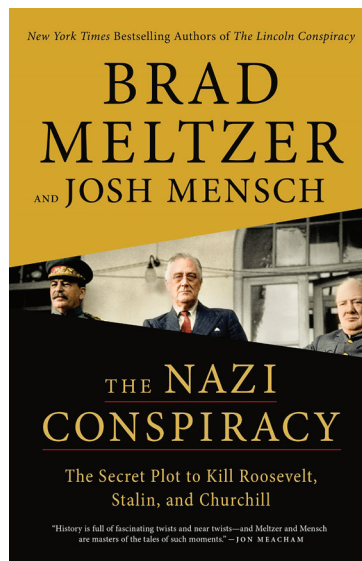
the former vice president and secretary of defense, who had his first heart attack at age 37. Subsequently, he benefited from each new improvement in the treatment of heart disease by having a quadruple coronary bypass at age 47; an implanted defibrillator; a mechanical external ventricular assist device for his heart failure; and finally, a heart transplant in 2012. Cheney lives in Wyoming today.

Equally impressive is the progress in diabetes management since 1900 when a Type-1 diabetic's life expectancy was less than 1 year, and the only treatment was near starvation. The rivalry between the discoverers of insulin is mirrored by other medical pioneers. France's Louis Pasteur and Germany's Robert Koch raced each other to

find treatments for new deadly microbes. Jonas Salk and Albert Sabine vied to find the best vaccine to defeat the poliomyelitis virus.

Advances in treating the myriad variations of cancer include the immunotherapy which cured former President Jimmy Carter of metastatic malignant melanoma. Deaths from war trauma and childbirth have likewise been decreased dramatically by dedicated and innovative physicians.

Dr. Lam writes in terms which the nonscientific reader can understand. For example, he describes a pancreas as resembling Jabba the Hutt of "Star Wars" fame. He acknowledges the difficulties of achieving success in academic medicine and the future ethical risks and potential triumphs of genetic manipulation. His opinions seem well-reasoned and based upon common sense rather than political bias. This book should be read both for its homage to the heroes of medicine's past and for its optimism regarding medicine's future possibilities.



### *The Nazi Conspiracy: The Secret Plot to Kill Roosevelt, Stalin and Churchill*

By Brad Meltzer and Josh Mensch

Reviewed by Samuel Masket MD

With age I have developed a keener interest in history than I had when younger, and I find Nazi

and Holocaust era related material particularly compelling.

Perhaps that is because I sense and fear a global shift towards the right along with authoritarianism. I have an eerie feeling that we have "seen this picture before" and can only observe the trends. Moreover, I likely appreciate a sense of survivor's guilt; I experienced no loss of family members during that period, given that my progenitors came to the United States far earlier, allowing me to be insulated from the horrors of the World War II era.

As a result, I could not resist reading "The Nazi Conspiracy" once it appeared on *The New York Times* bestseller list after being released in January 2023. As it turns out, the subject of the book is actually an isolated event regarding the "Big Three" meeting of Franklin D. Roosevelt, Winston Churchill and Josef Stalin in Tehran in 1943. That said, the book still contains numerous references to the atrocities of the Holocaust, as some of those key Nazi players are involved in the main plot of this book.

As the story opens, the reader is taken to an unmarked car traversing the back streets of Tehran at high speed with the key occupant heavily cloaked and hidden away on the floor behind the front seats; the precious cargo was FDR. Not unlike Hollywood film noir movies that fade to black and take the viewer to earlier times, the authors then revert to the delicate and deft politics played out by FDR in order to bring together the three global leaders of the Nazi opposition.

As history has taught us, the Nazi invasion of the USSR in 1942 was particularly brutal for both parties. Millions died of starvation, freezing conditions and horrific battles. Stalin was insistent on having the Allies attack the Germans from the rear through France via England in order to



## What We're Reading

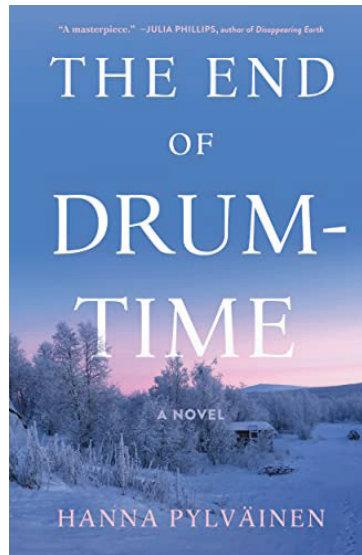
establish a second front, potentially easing Stalin's burden.

On the other hand, Churchill was reluctant to proceed as he sensed that Britain was not as yet prepared to invade, and that failure would cost Europe any hope for success against the Nazi war machine. Interestingly, Churchill would continue to express that same concern even into 1944 in advance of the June D-Day invasion that ultimately sealed the fate of the Nazis. There was little evidence of true harmony among the "Big Three," but Roosevelt's cunning and astute political skills led the way for a public meeting to be planned, though timing and location were contentious and caused significant logistic and security snafus. But the public relations benefit of such a meeting loomed very large as it would demonstrate to the world that the Allies had the unity, ability, and resolve to bring down Hitler and in turn the Japanese.

The "back story," however, is that German intelligence got wind of the proposed meeting and planned to assassinate the "Big Three" and turn the battle for public relations to their favor. The details of their plans and the operatives who would carry them out read like a spy novel, bringing the reader to frenzied page turning. The man in charge of the Nazi conspiracy operation was responsible earlier for a nearly unimaginable rescue of Italian dictator Benito Mussolini after his capitulation and capture by the Allies.

Of course, by history we know that the meeting of the "Big Three" occurred, was successful, and that the Nazi conspiracy failed to carry out the assassinations. Interestingly, records of all of these activities are sparse, and some critics have doubted that the event actually occurred, though the authors make a compelling

argument for it. So, in the end the reader must decide if the assassination plot was fact or fiction, but the remainder of the history is essential reading for those interested in the details of that era.



### *The End of Drum-Time*

By Hanna Pylväinen

Reviewed by Robert L. Stamper, MD

I remember, in high school, learning a bit about the Laplanders, a people living in the far north of Scandinavia earning a living by hunting and herding reindeer.

Although there is nothing in the actual word "lapp" that is inherently pejorative, many today feel that it is better to use their own word for themselves which is "Sami." The Sami have their own language and culture which the Swedes, Norwegians, Finns and Russians from the more southern parts of their countries have spent hundreds of years trying to squelch.

The push on the part of Lutheran evangelicals to Christianize these semi-nomadic and spiritually devout people was particularly intense. Some of these evangelicals were not necessarily driven only by theological motives. Enter an unusual Lutheran evangelical, Lars Levi Laestadius in the mid-19th century. Part Sami himself, he preached a form of Christianity that appealed to many Sami's based on forgiveness for sins that were openly confessed.

He was particularly successful at reducing rampant alcoholism, often encouraged by his predecessors. Some of his teachings persist in small colonies in Scandinavia, Russia, North America and Africa as Laestadian Lutheranism.

Against this historical backdrop, Hanna Pylväinen has constructed a sweeping saga set in 1851 in a small town well north of the Arctic Circle and in an area where the fuzzy borders of Norway, Sweden, Finland and Russia meet. Lars Levi Laestadius is one of the central characters. Her novel encompasses forbidden love, competing evangelical tactics, brute force, and international poli-

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*Against this historical backdrop, Hanna Pylväinen has constructed a sweeping saga set in 1851 in a small town well north of the Arctic Circle and in an area where the fuzzy borders of Norway, Sweden, Finland and Russia meet.*

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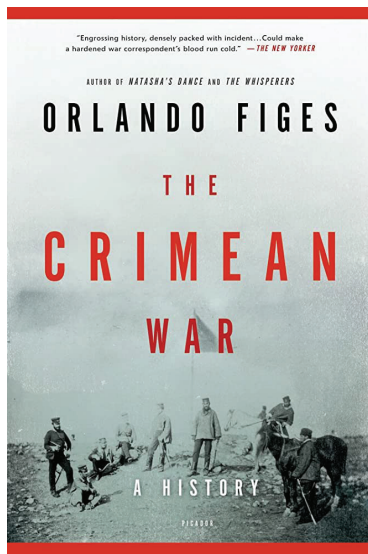
tics all in a beautiful but desolate landscape. There is even some of the inevitable conflict between ranchers and farmers that characterized the settling of the American Midwest.

We learn a lot about Sami culture, at least amongst the nomadic, reindeer herding, mountain Sami's. Her prose is evocative and helps us understand the forces of nature and politics that impinge on a millennium old culture that is being

## What We're Reading

targeted (like so many indigenous peoples of the New World) for extinction by the forces of “civilization”. We learn how the Sami’s eke out their hard-scrabble existence in this harsh and unforgiving climate.

After finishing the novel, I was motivated to do some internet searching on Wikipedia, amongst other sources, to learn more about these interesting people and this era; after researching the subject, I wished I had read the material before or early on in the novel. It would have helped to decipher some Sami terms and understand the larger picture. The book would have benefitted from a glossary of Sami terms. The novel is a great read on its own but is historically accurate in some of the politics, theology and history; knowing some of that only enhances the full understanding of its engrossing story.



### *The Crimean War: A History*

By Orlando Figes

Reviewed by Alfredo A. Sadun, MD, PhD

“The Crimean War” is a well-researched account of a conflict that reshaped the political landscape of Europe in the mid-19th century. What fascinated me most is that the book is a preamble to and a parallel of the present war in Ukraine. The

same geopolitics. The book offers a detailed overview of the war and the political tensions that led to the conflict when Russia invaded the lands near the Crimean Peninsula.

The Crimean War was fought from 1853 to 1856 between Russia and the allies, which were mainly the United Kingdom, France, Turkey, Austria-Hungary, Prussia (Poland) and Sardinia-Piedmont. Sound familiar? What we have now as NATO were the allies then. Ironically, Russia invaded the countries around the Black Sea then because the czar was convinced such an invasion would drive the countries of Europe apart as they would never support Turkey, a Muslim country.

That miscalculation is repeated again now. Another interesting aspects of Figes’ “Crimean War” is the focus on the role of technological innovation in the conflict. The Crimean War saw the first use of the telegraph and the railroad in military operations, and these innovations changed the nature of warfare just as satellites and drones changed the nature of warfare in Ukraine. These new technologies made the cavalry charge (remember the “Charge of the Light Brigade” at Balaclava) ineffectual just as drones and shoulder mounted guided missiles now make tanks less effectual in the Ukrainian war.

I learned the extent to which Russia views itself as the protector of the Eastern Orthodox Church then, and now. The Eastern Orthodox Church began in 11th-century Crimea, and so Crimea is viewed as holy ground. Some of this symbolism is lost on us in the present war in Ukraine. Czar Nicholas went to war as he was personally offended by his exclusion and lack of influence from European affairs. Later Czar Alexander continued the war as he could not lose face and autocratic control. Sound familiar? Putin is still fighting that war.

The war opened when the Russians acted in a brutal manner in the Battle of Sinope when a squadron of Russian ships assaulted the harbor in 1853 pulverizing the

infrastructure and non-combatants. They did this thinking it would impress and discourage involvement by the West, much as the brutalities at Bucha were made to discourage resistance. It might be argued that Russia was used to brutal tactics in suppressing their

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*The Crimean War saw the first use of the telegraph and the railroad in military operations, and these innovations changed the nature of warfare just as satellites and drones changed the nature of warfare in Ukraine.*

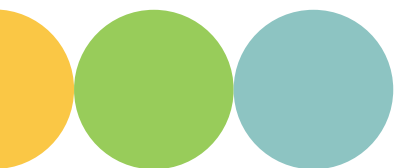
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Serfs (actually slaves in their society) and thus completely misread the West’s reactions then, and again now. The war showed the corruption in the Imperial Russian Army. It also drained Russia of blood and treasure and deeply undermined Russia’s influence in Europe.

Peace came when the Russians, finding themselves exhausted and at war with most of the rest of the world, came to terms with the Treaty of Paris in 1856. This treaty forbade Russia to base warships in the Black Sea. The present war in Ukraine is the continuation of that conflict as Russia has always been humiliated and handicapped by that limitation.

“The more things change, the more they remain the same.”





## Academy Foundation Update

### News from the Foundation

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

I write with deep appreciation for the support you, our members and key leaders in the ophthalmic industry have provided to the American Academy of Ophthalmology Foundation over the past year.

Very special thanks go to the Sir Knights of the Knights Templar Eye Foundation for an extraordinary gift to launch a new virtual reality program for pediatric ophthalmology. Foundation fundraising drives new initiatives and creates innovative updates to all the major Academy programs we rely on to provide the best quality eye care to our patients. In celebrating the generous support for these efforts, we raise a glass to each one of you who steps up to serve.

Under the leadership of the Foundation Advisory Board, we are focused on the future by raising funds to support major campaigns now underway:

**The Parke Center** will be a new conference facility at Academy headquarters, named to honor David W. Parke II, MD, our chief executive officer from 2009 to 2022. Thank you to our lead donors: Ophthalmic Mutual Insurance Co. and David and Molly Pyott, and to over thirty members who have given in honor of Dr. Parke. The design phase is now underway.

#### MEMBERSHIP HAS MANY PRIVILEGES – JOIN THE 1896 LEGACY SOCIETY TODAY!

In March, William L. Rich III, MD, wrote to many of you regarding the benefits of making an estate gift to the Foundation by becoming a member of our 1896 Legacy Society. This is an easy and simple way to give

back to the Foundation. Members who join before July 1 will receive the following recognition and benefits:

- 1896 Legacy Society members will be acknowledged in the Academy Foundation's 2022-23 annual report and on our website.
- One complimentary ticket to The Orbital 2023: Gold Rush (formerly the Orbital Gala) at AAO 2023 (\$300 value) in San Francisco on Nov. 5
- Invitation to an 1896 Legacy Society member dinner during AAO 2023

To make a commitment, just complete our [1896 Legacy Society Form](#) — that is all that is required! Need more information? Contact Todd Lyckberg at 415.447.0361 or [tlyckberg@aaio.org](mailto:tlyckberg@aaio.org), visit our website and view the names of colleagues who have made a commitment as [1896 Legacy Society Members](#).

#### THE ORBITAL 2023 GOLD RUSH!

Get your gold on and join your friends at the Foundation's major fundraiser of the year. [The Orbital](#) Committee are planning a fun 20th anniversary event Sunday, Nov. 5, at San Francisco's iconic Westin St. Francis Hotel. Enjoy delicious food and great drinks, see old friends and Academy leaders — all while you bid on unique “must have” items.

This year's Orbital Honorees are philanthropists David and Molly Pyott. The Academy's [Leadership Development Program](#) will be the beneficiary of this year's fundraising efforts. We will also toast the Academy's 2023 Artemis Award recipient selected by the Senior Ophthalmologist Committee. Tickets go on sale June 21.

## SCOPE

The Senior Ophthalmologist Newsletter

Ideas and opinions expressed in *Scope* are those of the authors and editor and do not necessarily reflect any position of the American Academy of Ophthalmology.

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