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Editorial
The song goes on

Robert Atnip, MD
The author (AΩA, University of Alabama, 1976) is a member of the board of directors of Alpha Omega Alpha.

I am an academic vascular surgeon, a senior faculty member at a University Hospital, a mentor of medical students and residents, and a teacher of professionalism. My own lessons in professionalism came while in medical school, but not in any classroom or book. I don’t recall the word even being spoken during those four years (1974–78). No doubt some of those who modeled it for me were physicians, but in retrospect, the most influential person was no doctor, but a musician.

That music has the power to pervade the human experience may be a mystery, but it is no secret. Music is as universal as the human senses, and as vital. As a form of human expression, music is at the same time both elemental and transcendent. It is one of humanity’s finest gifts to itself, a gift that to our lament cannot be as readily celebrated in The Pharos as the visual and literary arts. Music is not for speaking or writing. Music is ineffable emotion, a sequence of nameless swells and surges that defy the bounds of speech. Our voices are put to much better use making music than describing it and, in like manner, professionalism is much less a creed to be discerned and codified than it is a craft to be realized and enacted. Therein lies the basis for choral music to instruct me in the finer points of professionalism.

Nowadays, professionalism is a paramount concern to the health care world, but it was not always so. “Professionalism” was irrelevant to academia prior to 1965. My search for “professionalism” as a key word in OVID (1947–65) returned only the red-lettered retort, “Unable to match with any subject heading.” In the fifteen years that followed, “professionalism” made its debut with 180 appearances, the majority in nursing journals or, oddly enough, in the dentistry literature. But only in the last thirty years has “professionalism” gained enough traction to merit the eight subject headings to which it now maps in OVID, the thousands of publications devoted to probing its obliquities, or the several awards and grants now bestowed in its name by prestigious societies such as ours.

This logarithmic progression is extraordinary for a concept that acquired its name as long ago as the fourteenth century. Toward the end of the so-called Dark Ages, the word “profess” appeared among religious orders with the meaning “to take a vow,” or “to declare [a belief] publicly.” This definition and related word forms served adequately, perhaps even admirably, throughout all subsequent ages of history and into modern times. Only in the post-Modern era has the simplicity and sparse eloquence of these phrases come to be viewed as inadequate for today’s professionals. But I think what may be lacking is not the words, but the... music!

And so in the mid-1970s, modern professionalism’s “early years,” I came upon my unwitting mentor-to-be while in medical school in Birmingham, Alabama. Having enjoyed music and singing as a youth, and wanting some activity beyond the confines of studying anatomy and physiology, I met JWS, the organist and choirmaster at a local church. The meeting was happenstance, but serendipity has never worked any better magic than this. I joined and sang in his choir, as much an amateur singer as I was a fledgling doctor. But the experience was profound, a turning point for me, and a revelation of new worlds. For the next three years this choir became as important to me as my medical education. Under the direction of JWS, or more properly, under his spell, I learned what it is to “profess” choral music: to blend many voices into one sound, the music built on every voice, but ever greater than any one alone; to tune each voice and phrase toward perfection; to purify many harmonies into one great and coherent beauty. The sounds and the music were exquisite, many of them recorded at that time, and still inspiring to me more than thirty years later. To listen to them is to understand the fruits of professionalism and, moreover, to discern therein a startling similarity to what we seek to do in the individual and corporate acts of medical practice.

This connection of music to medicine may seem obscure to some, and self-evident to others. But I contend that the truths learned in the making of music are the same truths that we who profess medicine must teach our students, and re-affirm for ourselves: competence, discipline, determination, focus, artistry, the seeking of common goals, the drive to excel, the ability to lead and to follow, and one perhaps not as obvious: aesthetics—the presence of beauty and inner harmony in what we do. I do not equate humanism with professionalism, but they have much in common. They are separate yet inseparable, linked by a common need for each to nourish the other. I was most fortunate at a remarkable and formative time of my life to be in a milieu suffused with an abundance of each. To those who cleared this path for me, I owe an inexpressible debt. They knew that professionalism has not only a body, but a soul.

It was never my destiny to become a professional musician, but I am delighted to be a musical professional. Music may not have made me a better medical scientist, but it has made me a better physician. Vita brevis, ars longa. To the extent that we are true to our identity as healers, then we must— in concert with advances in science and technology—remain centered on the collective humanity of patient and physician, which in all its forms is our common bond.

JWS retired in 1998, and died in 2007 of Parkinson’s disease. He and Ted Harris were much alike. They were extraordinary persons who led others to perform beyond expectations, and showed all those around them that exceptional effort yields uncommon rewards. These two men were called into different professions, but each understood precisely what it meant to “take a vow” and to “declare publicly.” It is to the betterment of humankind that each lived, and thus our own joyful duty to ensure that their song goes on.
IN THIS

ARTICLES

Visionary art?
Shamans, Charles Bonnet, and the cave paintings
Henry N. Claman, MD

Going first
Susie Morris, MD, MA

The monsters of medicine
Political violence and the physician
Amanda J. Redig, MD, PhD

DEPARTMENTS

1 Editorial
The song goes on
Robert Atnip, MD

35 Health policy
Our health care system is not broken—it’s obsolete!
Jordan J. Cohen, MD

42 The physician at the movies
Peter E. Dans, MD
Wall Street: Money Never Sleeps
Conviction

46 Reviews and reflections
The Checklist Manifesto: How to Get Things Right
Reviewed by David A. Bennahum, MD

The Jump Artist
Reviewed by Jeffrey L. Ponsky, MD

Henry Kaplan and the Story of Hodgkin’s Disease
Reviewed by William M. Rogoway, MD

Reviewed by Jack Coulehan, MD

51 Letters

AΩA NEWS

38 2010 Alpha Omega
Alpha Robert J. Glaser
Distinguished Teacher Awards

52 National and chapter news
Instructions for Pharos Authors Leaders in American Medicine
Breaking bad news
What poetry has to say about it
Dean Gianakos, MD

From rabbits to the League of Nations
Early standardization of the insulin unit
Barry Fields, MD

POETRY

11 Room K461
Mary Krane Derr

15 Musings on an Attic Tetradrach
Alvin J. Cummins, MD

23 Sestina on Limb-Lengthening Surgery
Jenna Le

27 Heartache
John Allan, MD

34 The Defendant
H. Harvey Gass, MD

36 Memento Mori
Michael R. Milano, MD

37 Reading a Review
H. J. Van Peenen, MD

40 Winning Poems of the 2010 Write a Poem for This Photo Contest
Benevolent Instructions
David R. Downs, MD
Commencement
David F. Dozier, Jr., MD
Adolescent Choices
H. J. Van Peenen, MD

INSIDE BACK COVER
Ageless
Thomas Atwater
For Adrian Felix Carroll

Tiny blue open-backed gown that never quite ties back up.
Tiny blood pressure cuff, thermometer cuff.
Tiny vital signs.
Tiny primary color-coded IVs, tiny calibrated pumpings of opiate, anxiolytic; total parenteral nutrition with adjusted lipids to avert liver failure.
Tiny blood transfusion.
Tiny ostomy bag.
Tiny liquid rolling crescents of bluegreen wake-eye. Tiny flickering visits with.
Tiny answers from hall-snagged docs.
So what is there here to miniaturize away this innards-clawing, hemorrhagic fever of grief?

Mary Krane Derr

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Illustration by Jim M’Guinness
Sestina on Limb-LENGTHENING Surgery

John’s father was a famous novelist, his mom a musical sensation. In short, John was born with two silver spoons in mouth. A bright boy, he sailed through Harvard, then demonstrated valor in the Horn of Africa. A great career in politics awaited; the only obstacle was John’s stature: he was only five-foot-two, puny as a sapling that lists whichever way the wind blows. For a great price, John secured the services of a short-spoken but skilled cosmetic surgeon, who operated on John’s bones to make him taller, so his mouth could speechify from a loftier place. The mouth of conventional wisdom says that only females are vain, preening in front of crenellated mirror frames, making lengthy shopping lists of perfumes, lipsticks, skirts, and shorts; but masculine vanity is no less great.

My friend Millie, whose voice is apt to grate, but who has pretty eyes and a sweet mouth, helped me see why this is the long-and-short of the matter. She tells me that she only dates boys who are at least five-foot-ten, lest their offspring’s height be too modest, too understated.

Where prejudices of this kind are indurated, it’s no surprise that male vanity is great. The man I date, the man who tops the list of men in my life, with his honest mouth says that his brothers tower over him only because he is a twin: he has been short ever since he, together with his short sister, inhabited their mom’s trabeculated womb. He regrets his shortness, saying, “If only I were taller . . . ,” while the fire in the grate backlights the beauty of his face; his mouth, nose, eyes all vie for which is loveliest to me. My stammering mouth replies at last, “My patient, John, could have been great if only a complicated surgery hadn’t cut his life short.”

Jenna Le

Ms. Le is a member of the Class of 2010 at the Columbia University College of Physicians and Surgeons. This poem won first prize in the 2010 Pharos Poetry Competition. Ms. Le’s e-mail address is: jenna.le@gmail.com.
Breaking bad news

What poetry has to say about it

Dean Gianakos, MD

The author is the associate director of the Lynchburg Family Medicine Residency in Lynchburg, Virginia, and a member of the editorial board of The Pharos.

Breaking bad news to patients is difficult. Even experienced physicians struggle to do it competently. Until recently, it’s a skill that has received little attention in medical schools, residencies, and fellowship training programs. There is scant evidence on how to do it well. Most articles on the subject refer to certain steps that may be helpful: create a comfortable setting for patients and families; find out what patients know about their condition; ask them how much they desire to know; deliver the news in a clear, concise fashion; show empathy; be prepared to respond to various reactions to the news—sadness, denial, anger, or guilt; and, finally, summarize and outline a plan for the patient.

Experience, frequent practice, coaching from mentors, and reviewing the medical literature are traditional ways to improve one’s ability to deliver bad news. I believe reading poetry is another way: reading poems with care and empathy fosters an appreciation of the importance of language, feelings, and nuance in communication and relationships. Raymond Carver’s poem, “What The Doctor Said,” offers insights into patient-physician relationships not found in other forms of instruction. In this poem, Carver shows how difficult, frightening, and awkward (for the patient and physician) delivering and receiving bad news can be:

He said it doesn’t look good
he said it looks bad in fact real bad
he said I counted thirty-two of them on one lung before
I quit counting them
I said I’m glad I wouldn’t want to know
about any more being there than that
he said are you a religious man do you kneel down
in forest groves and let yourself ask for help
when you come to a waterfall
mist blowing against your face and arms
do you stop and ask for understanding at those moments
I said not yet but I intend to start today
he said I’m real sorry he said
I wish I had some other kind of news to give you
I said Amen and he said something else
I didn’t catch and not knowing what else to do
and not wanting him to have to repeat it
and me to have to fully digest it
I just looked at him
for a minute and he looked back it was then
I jumped up and shook hands with this man who’d just given
me
something no one else on earth had ever given me
I may have even thanked him habit being so strong

The doctor in the poem botches it—badly. In his first attempt to deliver the news, he tries a detached, scientific approach: he counts. Not only does he count the nodules; he reports the number to the patient—the number before he stops counting. Ten, twenty, or thirty-two nodules—what clinical difference does it make? Then he resorts to quasi-religious, poetic imagery: “do you kneel down in forest groves and let yourself ask for help when you come to a waterfall, mist blowing against your face and arms.” I’m fine with asking patients if they are religious, but does anyone want this question after being told they have more than “thirty-two of them on one lung”?
The truth is, most of us blunder from time to time, no matter how experienced we are in communicating serious news. We come prepared with the words that soothe—“this must be very difficult for you; I cannot imagine how you must feel”—only to utter stupid, insensitive things. And sometimes the patient saves us from ourselves. He feels the doctor’s discomfort in breaking the news, and works to ease the doctor’s pain, jumping up and even thanking him!

Every time I read this poem, I feel uncomfortable. I squirm as the anxious physician who cannot find the right words to communicate in an honest, sensitive way. I squirm as the patient who suffers through not only the news about a devastating diagnosis, but also the nonsense coming from the physician’s mouth. What could the physician in Carver’s poem have done differently? What can any of us do when we realize the conversation is going badly? After his first verbal blunder, maybe the physician should have said something like: “I’m not saying this very well; let me start over.” Maybe he should have started the conversation with “I wish I had some other kind of news to give you,” and then quietly waited for the patient’s
response after delivering the diagnosis. Things might have gone differently. Perhaps not. At many points in the dialogue, I simply want the physician to stop talking. And maybe that is one of the major lessons of the poem.

Dr. John Stone’s poem “Talking to the Family” delivers other insights:

My white coat waits in the corner
like a father.
I will wear it to meet the sister
in her white shoes and organza dress
in the live of winter,
the milkless husband
holding the baby.
I will tell them.
They will put it together
and take it apart.
Their voices will buzz.
The cut ends of their nerves
will curl.
I will take off the coat,
drive home,
and replace the light bulb in the hall.8

The physician’s fear of doing his duty is palpable. Like a boy who dreads telling his father about an accident or other bad news, but knows he must, the physician reluctantly puts on his white coat of authority to inform the family of the patient’s death. As Kathryn Montgomery beautifully puts it,

the secret of the poem, the reason its speaker is not the heartless bastard a first-year student every now and then will argue he must be, is that, except for the first line, it is written in the future tense. . . . The dreadful telling has not happened yet. The speaker is still elsewhere, off stage, in his office perhaps, and the dread—and with the acceptance of a physician’s duty—is his.9

Despite the tragedy, life goes on. The physician cannot dwell on the moment—he has other patients to see, and other patients to console. He also has other things to do. Doctoring is only one of his roles. The doctor slips on his white coat at work, and slips it off when his professional duty is done. He goes home and, like the rest of us, must perform mundane tasks such as changing light bulbs.

The simple, mechanical task takes his mind off the terrible news. Changing the light bulb is an important step toward focusing on the present, renewing his energy, and healing his own pain. The light goes out in one life, but the doctor is climbing the ladder again, making physical and emotional adjustments so that he can bring new life and light to others. Life goes on.

Physicians need to be intellectually and emotionally prepared to deliver bad news. Patients and families may have many questions about treatment and prognosis. They may react to the news in a variety of ways, including sadness, anger, or shock. And physicians themselves will have their own reactions to the telling of the news. But preparation for these things is not sufficient. Once they are in the middle of a conversation, physicians must be flexible, creative, and self-aware, ready if necessary to change the direction of the dialogue, offer a tissue, or simply be quiet. Like Stone’s poem, what’s left unsaid often has more power than what is said: Stone does not explicitly tell us about the husband’s grief—he uses a remarkable image, “the milkless husband holding the baby,” to convey the impending grief and loss.

Reading the poems above is no substitute for preparation, practice, and clinical experience. Nevertheless, I believe physicians who read these poems with attention and empathy will enhance their understanding of language, feelings, and the communication of bad news. The poems also remind us how unpredictable these conversations can be, no matter how frequently we rehearse for them. Finally, we should not be surprised by our dread and reluctance to do our duty and deliver the message: a milkless husband is hard to bear.

References

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Heartache

A heart aches
Like the earth when it quakes
A void left where ground once lay
Impossible to heal
A scar fills the space
With memories that once were real

John Allan, MD

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Illustration by Jim McGuinness
From rabbits to the League of Nations

Early standardization of the insulin unit

Barry Fields, MD
The author is chief resident in Internal Medicine at the Yale Primary Care Residency Program.

From its advent in September 2006 until its removal from the market in October 2007, inhaled insulin for diabetes mellitus represented the first effective alternative to subcutaneous injections in more than eighty years. Aside from its administration modality, Exubera (Insulin Human [rDNA origin]) also transformed dosage labeling from the traditional insulin “unit” into milligrams. While this conversion may have appeared novel, it actually harked back to a time early in insulin therapy’s history. Indeed, defining insulin quantity in terms of milligrams sits at the heart of post-World War I efforts to ensure the new product’s safety and reliability. These early attempts at its international standardization laid the foundation on which insulin dosage is still based today.

Frederick Grant Banting
Courtesy of the National Library of Medicine

Producing an insulin extract
In the autumn of 1920, Canadian surgeon Frederick Grant Banting scribbled:

Diabetes,
Ligate pancreatic ducts of dog. Keep dogs alive till acini degenerate leaving islets.
Try to isolate the internal secretion of these to relieve glycosura [sugar in the urine].

In this short note, Banting outlined how he would find the quintessential treatment for a disease he could not even spell. Over the next year, Banting worked in the University of Toronto physiology laboratory of Professor J. J. R. Macleod. With the help of graduate students Charles Best and Clark Noble, he purified his first insulin extract from the degenerating pancreases of canine subjects and showed it could transiently reduce the animals’ blood sugar.

Banting presented his findings to the American Physiological Society conference in December 1921. Among attendees expressing interest in extract production was George H. A. Clowes, research director for the Eli Lilly Pharmaceutical Company of Indianapolis. Though his offer was initially turned down, it caused the researchers to patent their process to maintain their control over the integrity of the extract’s manufacture and purification. The University of Toronto’s Board of Governors subsequently licensed the process to Lilly’s laboratories. American production supplemented the relatively meager yields at Toronto’s own Connaught Antitoxin Laboratories, supplying a burgeoning international market with insulin therapy.

To oversee insulin’s future licensing and distribution, the Board of Governors organized Toronto’s Insulin Committee (IC) in 1922. One of its first actions was to offer patent rights to the British Medical Research Council (MRC), thus giving Europe its first access to insulin. The MRC sent Dr. Henry H. Dale, a department director at their National Institute for Medical Research, to Toronto. Dale quickly recognized the promise of insulin and suggested the
MRC accept control of the British patent. At the same time, he and his traveling companion, biochemist Harold W. Dudley, expressed serious reservations regarding the IC’s earliest definition of the insulin unit. Dale wrote:

The Toronto definition of a “unit” of the specific insulin activity, was the dose required, with intravenous injection, to throw 3 out of 5 rabbits into hypoglycaemic convulsions! I had made it no secret, from the first, . . . that I regarded such a definition as having so little claim to accuracy, as to be practically almost useless, and eventually misleading.\(^{2p445}\)

Clowes from Lilly later echoed these misgivings when developing a reliable insulin unit became a matter of international concern.

A rabbit-based unit

Dale’s observation came months after the first insulin unit was defined. During the spring of 1922, Macleod, James B. Collip, Banting, and Best began calibrating insulin by its effects on animals. Using two-kilogram rabbits, they determined that hypoglycemic convulsions usually appeared as the animals’ blood sugar component fell below 0.045 percent. This observation served as a threshold on which to base the first “physiologic unit” or “rabbit unit” of insulin, about one cc. The authors wrote:

As a tentative basis for the physiological assay of insulin we consider as one unit the number of cubic centimeters which causes the blood sugar of normal rabbits to fall to 0.045 per cent within 4 hours. This dose is decidedly active in lowering the blood sugar in diabetic patients.\(^{3p175}\)

Their report also compared the effects of infused insulin solution on a two-kilogram normal rabbit with an eleven-kilogram depancreatized dog. The authors noted that, after taking into account the animals’ weight and dosage disparities, the dog still showed a much more dramatic reduction in blood sugar levels after having received only one third the dose that the rabbit had received.\(^{3}\)

These early attempts to define an insulin unit coincided with the first diabetic human patients being treated with the pancreatic extract. Fifteen-year-old Elizabeth Hughes, the diabetic daughter of New York governor and future Chief Justice Charles Evans Hughes, began her injections in mid-August. Just one cc twice daily effectively cleared the sugar from her urine. However, by October her dosage had risen to five cc twice daily. In a letter to her mother, Hughes wrote:

Courtesy of the National Library of Medicine.
resulted in wide fluctuation in the final product’s activity. Therefore, while Canadian researchers held the definition of an insulin unit constant in terms of its clinical effects on rabbits, the actual dosage fluctuated greatly.\(^1\)

**An ever-evolving unit**

Late in 1922, additional criticism of the definition of the insulin unit emerged from giants in American diabetology such as Dr. Frederik Madison Allen and Dr. Elliot P. Joslin. These physicians and their colleagues disliked the “physiologic unit” of insulin because its relative strength in humans forced some patients to receive fractions of a unit, creating confusion among patients and nurses alike.\(^4\) Clowes at Lilly brought their concerns to the IC. On December 30, 1922, they announced:

The Toronto Committee conferred with Drs. Clowes, Allen and Joslin as to the adoption of a unit for insulin required to lower the blood sugar and the following conclusions were arrived at:

1) The unit adopted for insulin shall be approximately one-fifth that of the original Toronto unit, which is the amount of insulin required to lower the blood sugar of a 2 kg fed rabbit 0.045 per cent within four hours, and cause symptoms.\(^4\)

This new unit was to be called the “clinical” unit of insulin as opposed to the original “physiological,” “Toronto,” or “rabbit” unit. In this manner, the IC had adjusted its calibration of insulin to accommodate the needs of clinicians, as represented by Lilly. Further collaborations between the pharmaceutical company and the IC would not proceed as smoothly.

As with Elizabeth Hughes’s insulin supply, clinicians in 1923 complained of potency discrepancies among batches supposedly of the same clinical strength. California physician W. D. Sansum and his research team provided unique insight into the unit’s evanescence. During early 1923, they helped establish the “sugar-metabolizing power” of a given lot of insulin—the amount of sugar metabolized by each insulin unit. They showed Lilly’s insulin to have 1.25 grams of sugar metabolizing power per unit.\(^5\)

Unfortunately, clinicians and their patients remained vulnerable to continued unit modifications elsewhere.

Beginning in May, the researchers noted that previously well-controlled diabetic patients had sugar reappearing in their urine. The new insulin units’ sugar metabolizing power had decreased by approximately one third compared to one month previously. The authors state:

We then learned that the unit had been redefined as being one-third of the amount required to lower the blood sugar below 0.045% and cause convulsions in a two-kilogram rabbit which had been previously starved for twenty-four hours. This redefinition was based on the belief, supported by experimental evidence, that it requires four times as much insulin to cause a convulsion in a two kilogram rabbit as in a one kilogram rabbit. In using one-third instead of one-fourth the convulsion [dose] in the two kilogram rabbits, these workers believed that they were increasing the value of the unit.\(^5\)

Their comments allude to discrepancies in rabbit size between Lilly’s laboratories and those of the IC. While Toronto had been using two-kilogram fed rabbits in its tests of potency, Lilly had been using one-kilogram fasting rabbits.
To complicate matters further, Clowes never applied the IC’s new definition of the clinical unit to his product. Instead of dividing the physiologic unit by five per their directive, Clowes divided it by four and added twenty-five percent to account for product deterioration. He cited discrepancies in experimental results between Lilly and the IC and the tendencies of clinicians to desire a more potent unit to rationalize his decision.³ With an increasingly reliable extract provided by the IC and Lilly, attention could shift toward improving its international standardization.

A weight-based standardization scheme

A standardized drug is one that is always produced at equal potency in all manufactured lots. An international effort to standardize emerging treatments had been underway for decades before insulin was developed. Without knowing the chemical composition of these new biologic extracts, tests to determine potencies were relative; the substance’s effect on one group of animals (or “biological system”) would be compared to its effects on another reference or “standard” system. This procedure, however, assumed that the substance being tested and the animals in each test group were identical, an untenable assumption.⁶,⁷ As Lilly’s rabbits had demonstrated, standardization based solely on a reference biological system was fraught with dangerous inaccuracy.

In 1897, German physician Paul Ehrlich described attempts at medical standardization based on activity of a certain weight of active ingredient. His task had been to ensure uniform potency of the newly-developed diphtheria antitoxin; due to the instability of the diphtheria toxin, he was consistently unsuccessful. Recognizing the fallibility of the biological system, he devised a standardization scheme based on weight of dried antitoxin. His institute in Germany kept samples of the sterile, dried product in vacuum at low temperature. Units of antisera were defined in terms of the weight of this standard. Laboratories and production plants around the world could periodically obtain samples and compare them to their new product to ensure the potency of its unit matched the standard in Germany.

The MRC’s Henry Dale studied Ehrlich’s principles during a period in which he became increasingly frustrated with the international community’s attempt to standardize many medical breakthroughs. Efforts to institute unit standards consisted mostly of debates concerning the merits of one biological method over another.⁸ With Dale’s encouragement, the League of Nations Health Committee sponsored a 1923 Edinburgh Conference to discuss new methods of international standardization. In the months before the conference, Dale directed Dudley to prepare a solid form of insulin, resulting in insulin hydrochloride, a dried powder standard that companies and laboratories could compare their product against.

The League of Nations weighs in

When the International Congress met at Edinburgh in 1923, champions of biological systems proposed extending rodent hypoglycemia methods to international acceptance. Dale objected, citing the many drawbacks of such systems. He wrote:

> the definition, for permanent adoption and international transmission, of any unit of biological activity in terms of the reaction of a proportion of test animals, was inadmissible; and that the only safe basis for the definition of a unit of insulin, or of any other potent remedy, would be in terms of a precise weight of a standard, stable sample of the remedy in question, in the form of a completely dried powder.⁹

After displaying a vial containing the insulin hydrochloride Dudley had developed, Dale proposed that interested parties work to correlate amounts of the powder with what they believed to be the experimental activity of one insulin unit. He also suggested they ask the League of Nations for another conference in two years, at which investigators taking part in the trials could present their findings.

Reorganization within the League of Nations helped make that future conference a viable reality. In 1924, the League of Nations Health Committee became its Health Organization, one of several “technical agencies” that functioned semi-autonomously within the League.⁹ Its president, Thorvald Madsen, placed biological standardization near the top of his priority list for world health initiatives.⁷ These developments within the League, combined with ever-increasing numbers of new biological compounds, set the groundwork for a Second International Conference on Biological Standards at Geneva in 1925.

In the interim, five institutions, including Connaught Laboratories and Lilly, contributed samples of their insulin product to a growing pool of extract at the MRC. Under Dale and Dudley’s supervision, the preparations were combined and then converted to a single batch of powdered insulin hydrochloride. The product was divided into 100-mg ampules, dried, sealed, and sent to laboratories in England, Canada, and the United States. Those independent labs could determine the value of “solid” insulin in terms of their own units at the time. Their results were remarkably consistent, showing each milligram of powder to have a value of 8.4 to 8.8 units. To avoid fractional units, the IC declared that the solid insulin standard contained 8 units per milligram.¹₀

The Second International Conference met in late August and early September of 1925. Chaired by Henry Dale, it considered the standardization of several biological products, with insulin receiving particular attention. Their unanimous recommendation read:

> That the dry preparation of insulin hydrochloride, prepared by the Medical Research Council of Great Britain at the request of the Edinburgh Conference, should be
accepted as the international standard preparation of insulin. That 1 milligram of this standard contains 8 units of insulin (or 1 unit = 0.125 milligrams), as provisionally defined by the Insulin Committee of the University of Toronto.\textsuperscript{8}

The League of Nations’ Permanent Commission on Biological Standards subsequently adopted this recommendation. In doing so, the insulin unit was transformed from being defined by rodent convulsions to one determined by comparison to an internationally recognized standard preparation, in milligrams.

Over the next decade, decreases in the use of the standard preparation method and further advances in insulin purification led world authorities to seek a new standard insulin unit.\textsuperscript{10} In 1935, the League of Nations Permanent Commission on Biological Standardisation “accepted the new standard for international use and redefined the unit of insulin as the specific insulin activity of one twenty-second (1/22) of a milligramme of the new standard.”\textsuperscript{11} A Third and Fourth International Standard would be elucidated under the World Health Organization, United Nations’ equivalent to the League of Nations Health Organization. Remarkably similar to the 1935 standard, the Fourth International Standard defines biologically extracted insulin as 24.0 insulin units per milligram.\textsuperscript{10}

Therefore, more than eighty years after a unit-milligram equivalency was first created to ensure international insulin standardization, this concept was resurrected to simplify inhaled insulin dosing and administration in a new form. Tables on Pfizer’s Exubera website and in print aided clinicians and their patients in making this contemporary unit-to-milligram conversion (Pfizer’s web page for Exubera has been removed; a web page with similar information is referenced).\textsuperscript{12} In doing so, they also brought to mind a historical definition—that of the insulin unit itself.

Acknowledgment
I thank my faculty advisors Stephanie Brown-Clark, MD, PhD, and Michael Green, MD, MSc, for their thoughtful comments, guidance, and support in preparation of this manuscript.

References

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There in a royal box  
ordinary folks still as rocks  
posed as in a portrait  
decide another’s fate  
watching evidence passing by  
like shooting stars in the sky.

At recess the courtroom a deserted camp.  
In one corner the flag hangs limp  
like a runner out of breath.  
The defendant alone, the last on earth.  
The clock points its moving finger  
distanced from slander and anger.

Worry directs every thought  
about what legal tacks have wrought  
that may dissolve dreams to dust  
threatening future with rust.  
The decision, at last, is made  
by citizens returning in parade.

His honor enters in his black gown.  
Suspense suppresses every sound.  
All wait for words cast in cement  
that will terminate this event.  
“No cause,” the verdict of the jury.  
Behold the plaintiff’s fury.

From the defendant relief effervescent bubbles  
from a bottle of troubles.

H. Harvey Gass, MD

Dr. Gass (AOA, University of Michigan, 1941) is retired from practice as a clinical professor of Neurosurgery at Wayne State Medical School. His address is: 6155 East Longview Drive, East Lansing, Michigan 48823. E-mail: sgass@msu.edu.

Illustration by Jim M’Guinness
Our health care system is not broken—it’s obsolete!

Jordan J. Cohen, MD

The author (ΔΩΑ, Tufts University, 1978) is professor of Medicine and Public Health at George Washington University and president emeritus of the Association of American Colleges.

We often hear that our health care system is “broken.” Indeed, it’s become a pat refrain among policymakers and the media. But thinking the system is “broken” implies that it can be “fixed”—patched up to make it work like it used to. That’s what would-be health care reformers seem to think when they tinker with “fixes” like expanding insurance coverage with mandates and subsidies, guaranteeing insurance despite pre-conditions, crafting pay-for-performance incentives to change provider behavior, and expanding use of electronic medical records. All of these “fixes” would undoubtedly be helpful and should be implemented without delay. But unfortunately, even in the aggregate, these and other attempts to tinker with the current system cannot get at the fundamental problems we have to solve and, hence, are a far cry from true health care reform.

Why? Because our health care system is not “broken.” Rather, it’s outmoded. It’s archaic. It’s a legacy system that is simply incapable—inherently incapable—of meeting today’s health care needs, no matter how much we tinker with it. Imagine trying to fix a Model T Ford so that it could fly. You could put in a more powerful engine, take off the fenders, strap on wings, and put on a pair of aviator goggles. But you simply couldn’t get the darned thing off the ground!

The hand-me-down system we’ve inherited is just like that old car, the product of a bygone era that was well designed for yesteryear but is no longer serviceable. Yesteryear was when the health care system needed to deal primarily with acute, often self-limited illness and injury; when medical technologies were much more limited in scope and much less complex; when we thought “the world’s best health care system” delivered uniformly high-quality care to everyone; and when the overall cost of health care was still in the single digits as a percentage of GDP.

In times like those, our country could get along quite well with autonomous doctors working solo or in small groups. And we rather liked having our doctors in total control, with all other health care professionals playing supporting roles. We could tolerate independent hospitals competing with one another for patients. We had a fee-for-service payment system that was well designed to deal with isolated episodes of illness and discrete encounters with individual providers. And paper-based medical records kept separately by each of our providers worked well enough.

Today, we face an entirely different set of realities, realities that our legacy system was never designed for, and can never be retrofitted to deal with satisfactorily. Chief among them are rising costs, an increasing burden of chronic, unrelenting disease and disability, way too many medical errors, inexplicable variations in the way medicine is practiced across the country, profound lapses in quality, and wide disparities in health and health care even among those with adequate insurance.

The fragmented, uncoordinated, fee-for-service conglomeration we have inherited cannot hope to cope effectively with these twenty-first-century challenges.

If policymakers would shift their mental model from “broken,” let’s fix it” to “obsolete, let’s redesign it,” I doubt there would be much disagreement about the features a new system should have. We’d want “units of accountability” big enough to be held responsible for delivering comprehensive, high-quality, cost-effective care to large groups of people. These units of accountability would be required to develop systematic approaches to weeding out waste, to coordinating the care of the chronically ill, to avoiding redundant tests, to guaranteeing that preventive strategies were broadly implemented, and to fully utilizing the skills of all health care workers in high-performing teams.

Moving from our dysfunctional, fragmented legacy system to an integrated, accountable system will not be easy and will not happen quickly. The barriers to achieving the fundamental transformation required are enormous. An entirely different financing scheme will be needed to release the system from the paralyzing constraints of our current fee-for-service arrangement, and a new cultural paradigm among providers will be needed to foster collaboration, teamwork, accountability, quality improvement, and patient safety. Even before clearing those barriers, however, a way must be found to overcome the resistance from entrenched stakeholders who are profiting handsomely from the current system and who have powerful political allies.

But the risk of trying to preserve an obsolete system is simply too great to let these obstacles stand in the way of needed reforms. Fortunately, a window of opportunity has opened up. Buried in the myriad “fixes” included in the Patient Protection and Affordable Care Act is a call for CMS to promote demonstration projects to implement and evaluate innovative approaches to organizing and delivering health care. Such demonstrations could allow for the creation, on a large scale, of what Stephen Shortell and Lawrence Casalino have called accountable care systems, systems that are “capable of implementing organized processes for improving the quality and controlling the costs of care, and of being held accountable for the results.”

Being “accountable” would entail both...
Our health care system is not broken—it's obsolete!

demonstrating appropriate clinical outcomes and taking on significant financial risk. It’s hard to imagine how these expectations could be met in the absence of a fully integrated system of providers in which doctors, nurses, hospitals, public health professionals, nursing homes, pharmacists, home health agencies, etc. join forces to manage *cost-effectively* the care of individuals and to deal *systematically* with the known health needs of a region or population.

As possible points of departure for developing such truly accountable care systems, Shortell and Casalino suggest several current organizational arrangements including multispecialty group practices, hospital staff organizations, physician-hospital organizations, independent practice organizations, and health plan-provider organizations or networks. I’m concerned that none of these existing organizational arrangements is likely to be sufficiently scalable to meet the real challenges. What has more potential of doing so, in my view, are well-organized academic health centers.

Indeed, many academic health centers are uniquely poised to develop the kind of integrated health care systems that we need. Many already have organized faculty practice plans, a network of affiliated hospitals, community physician referral bases, a relatively robust IT infrastructure, a tradition of innovation, loyal patients, and the trust and respect of their communities. Modern information technologies could be used to stitch together the network of hospitals, doctors, home health agencies, pharmacies, and other community resources needed both to provide for the health and health care needs of a large population and to monitor the system’s fiscal performance and to identify opportunities for improvement. Given their existing capabilities—and their avowed mission to serve the public interest—academic health centers, either individually or preferably in partnership with others, should lead the way toward solving what is arguably the most urgent health problem facing our county.

However we do it, if we want our health care system to fly in the twenty-first century, we’ve got to stop trying to repair a hodgepodge arrangement that is hopelessly antiquated and get on with the hard work of replacing it with a real system that can actually do the job. Now that Congress has provided CMS with substantial resources to fund more appropriate ways to structure and finance health care services, I believe academic health centers—as engines of innovation—should seize the opportunity to demonstrate what true health care reform might look like.

References

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Memento Mori

The first one caught me by surprise.
I was doing my initial thoracentesis,
a task less daunting than the word implies.
A cheerful woman gasped from fluid in her chest,
a pleural effusion caused by rampant cancer.
There was no effusiveness in the somber needle
I guided carefully through her chest wall.
"I'm going to die now," she calmly said,
and, with nothing further, laid back dead.

It was the moment doctors dread;
full frontal with the enemy ahead
And I midwife to the highest drama.
This was no time for contemplation.
Coding, CPR, intracardiac adrenaline;
we were quick and forceful, but for naught.
Relatives were notified, and in intense detail
we probed each second, searching for a clue or cause.
None came, and nothing from a later autopsy.
We had no solution, no solace, and no one to blame.

While preachers celebrate the rising soul,
and mystics sense transfiguration, and
loved ones clasp one another, casting
hope against the loneliness of death,
we found no answer in her body,
no meaning in the metaphysics,
and nothing in ourselves to talk about.

Michael R. Milano, MD

Dr. Milano (AΩA, Albany Medical College, 1964) is a psychiatrist living
and practicing in Teaneck, New Jersey. His e-mail address is: milanovinosnos@aol.com.
I have learned from this reading that I will die not by the agency of great gods of sea and sky, or of the lesser ones, the sprites of groves and wells, nor even by will of the many-breasted mother, Earth herself.

I must kneel instead to bits of my own cells, those invisible smalls within, where methyls delve, and shortened ribbons of RNA plug phosphates to genes and capriciously play with my molecules making them epigenetic.

This change in belief runs through me like a panic attack. Worship my genes? They are far too small for that. I am used to gods who are huge, and call on lightning's power, or sometimes explode a sun over a cave in Palestine.

Water from rock, pillars of fire define my life and beliefs. How can I live with the notion that these new gods of cancer, incapable of emotion, not even of guilt, have no concept of a high God's mercy and unearthly love?

Must I plead to my own, these bits of cell débris, even as they settle down to murder me?

H. J. Van Peenen, MD

Dr. Van Peenen is retired from medical practice. His address is: 74 W. 29th Avenue, Apartment 1103, Eugene, Oregon 97405. E-mail: lkvanp@comcast.net.

Illustration by Jim M'Guinness
2010 Alpha Omega Alpha Robert J. Glaser Distinguished Teacher Awards

Each year since 1988, Alpha Omega Alpha, in cooperation with the Association of American Medical Colleges, presents four AΩΑ Distinguished Teacher Awards to faculty members in American medical schools. Two awards are for accomplishments in teaching the basic sciences and two are for inspired teaching in the clinical sciences. In 1997, AΩΑ named the award to honor its retiring executive secretary Robert J. Glaser, MD. Nominations for the award are submitted to the AAMC each spring by the deans of medical schools.

Nominations were reviewed by a committee chosen by AΩΑ and the AAMC. This year’s committee members were: Ronald Arky, MD; David A. Asch, MD, MBA; J. John Cohen, MD, PhD; Molly Cooke, MD; Eugene C. Corbett, MD, FACP; Linda S. Costanza, PhD; Arthur F. Dailey II, PhD; Erika Goldstein, MD; Aviad Haramati, PhD; Bruce M. Koeppen, MD, PhD; Jeanette Norden, PhD; Paul L. Rogers, MD; James L. Sebastian, MD; Gabriel Virella, MD, PhD.

Winners of the award receive $10,000, their schools receive $2,500, and active AΩΑ chapters at those schools receive $1,000. Schools nominating candidates for the award receive a plaque with the name of the nominee.

Brief summaries of the accomplishments in medical education of the 2010 award recipients follow.

Richard L. Byyny, MD Executive Director

Gary L. Dunnington, MD (Clinical)
J. Roland Folse Professor and Chair of Surgery, Southern Illinois University School of Medicine

Dr. Dunnington (AΩΑ, University of Southern California, 1994) joined Southern Illinois University School of Medicine in 1979 as professor in the Department of Surgery. Since then, he has been director of the General Surgery Residency Program and professor and chair of the Department of Surgery. He was named the J. Roland Folse Professor and Chair of Surgery in 2009.

Dr. J. Kevin Dorsey, dean of the SIU School of Medicine, writes: “Dr. Dunnington is a passionate advocate and practitioner of excellence in medical education. He has received nineteen teaching awards at three institutions, including the Outstanding Teacher of the Year award at SIU in 2010. With several colleagues, he developed and refined an academic incentive system that has been in use at SIU for more than ten years. Dr. Dunnington’s influence spreads far beyond the walls of SIU, however. He was one of the thought leaders involved in the ACGME’s Task Force charged with developing the six competencies toward which all residents in the United States now train. He and four other surgeons were founding members of the American College of Surgeon’s Surgeons as Educators course. He facilitated the development of a “surgery readiness” elective for senior medical students, which is among the highest rated electives in the school and has inspired other SIU clinical departments to create similar electives. The report of the program in the medical literature has spawned numerous clones. A comprehensive system for evaluating operating room performance was selected by the American Board of Surgery as a template for a national system for rating operative performance. It will be required for all applicants for board certification.”

Dr. Dunnington says of teaching, “You have to teach from the learner’s agenda, not from scripts. A truly great teacher says, ‘What can I help you learn today?’”

Duane E. Haines, PhD (Basic)
Professor and Chairman, Department of Anatomy, University of Mississippi Medical Center School of Medicine

Dr. Haines received his PhD in Anatomy-Physical Anthropology at Michigan State University. He joined the University of Mississippi in 1985 as a professor of Anatomy. He has received the A. J. Ladman AAA/Wiley Exemplary Service Award and the Henry Gray/Elsevier Distinguished Educator Award from the American Association of Anatomists, and the Silver Hammer Award as Teacher of the Year from...
the Department of Neurology at the University of Mississippi Medical Center.

Dr. LouAnn Woodward, dean of the University of Mississippi Medical Center School of Medicine, writes of Dr. Haines: “Dr. Haines embodies the definition of ‘doctor’ from the Latin ‘to teach.’ He has consistently gone the extra mile to provide an excellent quality education program with a focus on clinically relevant information.

‘Dr. Haines is well recognized for his atlas of the human brain, Neuroanatomy: An Atlas of Structures, Sections, and Systems, now in its eighth edition. He is also the editor and co-author of Fundamental Neuroscience for Basic and Clinical Applications, currently in its third edition.

‘At every medical center where he has held a faculty position, Dr. Haines has been extensively involved in teaching programs of his department. His many teaching awards span both undergraduate and graduate education.

‘Dr. Haines is a model educator and true scholar with a great heart for students.’

John W. Pelley, PhD (Basic)
Associate Professor of Cell Biology and Biochemistry, Texas Tech Health Sciences Center School of Medicine

Dr. Pelley received his PhD in Zoology from the University of North Carolina. He joined TTUHSC in 1972 as assistant professor in Biochemistry.

Dr. Pelley has received the President’s Excellence in Teaching Award twice at TTUHSC. He has also received the School of Nursing Dean’s award for teaching pathophysiology. He has received the SGEA Medical Education Scholarship Award for the Outstanding Presentation and the Award for Merit for Applications in Healthcare Education by the International Associate for Psychological Type.

Dr. Steven L. Berk, dean of the School of Medicine, writes: ‘Dr. Pelley has achieved significant recognition for his teaching contributions both within and outside of the TTUHSC School of Medicine due to his use of innovations in the classroom such as concept mapping, question analysis and ‘prefrontal pauses.’ These teaching strategies are designed to develop the student’s ability to learn as well as to improve delivery of content. He has authored a popular USMLE Step 1 review book, now in its third edition, and a course companion biochemistry book that is part of an integrated series (second edition in preparation).

‘Dr. Pelley’s teaching extends well beyond biochemistry. He has developed an expertise in learning theory and strategies in medical education. He developed his metacognitive approach to learning during his ten-year tenure as associate dean for Academic Affairs, which he documented in the book SuccessTypes in Medical Education, freely available at the SuccessTypes Medical Education Page (www.ttuhsc.edu/som/success/default.htm). Dr. Pelley is an active member of the international medical education listserve, DR-ED, the Southern Group on Educational Affairs, International Association of Medical Science Educators, and Team Based Learning Collaborative.”

James R. Stallworth, MD (Clinical)
Associate Professor, Department of Pediatrics, University of South Carolina School of Medicine

Dr. Stallworth (ΩA, University of South Carolina, 1987) joined the University of South Carolina in 1979 as an instructor in Pediatrics. He is currently associate professor in the Department of Pediatrics, Vice Chair for Education and Faculty Development, the M-III Pediatrics Clerkship Director, and Director of Student Recruitment. Dr. Richard A. Hoppmann, dean of the School of Medicine, writes: "There is only a short list of names on the outstanding teachers list at the University of South Carolina School of Medicine. The name of Dr. James Stallworth is at the top of that list. A faculty member for over thirty years, he has become a legend among students, faculty, and alumni. Dr. Stallworth’s involvement in undergraduate education spans all four years of medical school, but he is best known for his role as M-III Pediatrics Clerkship Director, a position that he has held for twenty-seven years. The reason he remains clerkship director has nothing to do with lack of ambition, but everything to do with his passion for medical education and his desire to see every student reach their full potential and succeed as a physician. Over the years he has garnered tremendous respect from students for his straightforward, no-nonsense approach to pediatric clinical education, and for the high ethical and professional standards that he sets for himself and for students. "It is because of Dr. Stallworth that many of our students over the years have chosen to train as pediatricians. Former students would tell you about his caring and concern for his patients. They would also tell that Dr. Stallworth could be quite intimidating, but he never let any of them give any less than their best for their patients and themselves.”

Distinguished teacher nominees

Patricia Lipford Abbott, MD, University of Florida College of Medicine

Ezra Amsterdam, MD, University of California, Davis, School of Medicine

Charles L. Bardes, MD, Weill Cornell Medical College

John B. Bass, Jr., MD, University of South Alabama School of Medicine

David M. Clive, MD, University of Massachusetts Medical School

Joseph C. Fantone, MD, University of Michigan Medical School

Mark Christian Flemmer, MD, Eastern Virginia Medical School

Barbara Freeman, PhD, Case Western Reserve University School of Medicine

Joshua I. Goldhaber, MD, David Geffen School of Medicine at UCLA

Stephen B. Greenberg, MD, MACP, Baylor College of Medicine

Richard Gunderman, MD, PhD, MPH, Indiana University School of Medicine

Jesse B. Hall, MD, University of Chicago

Pritzker School of Medicine

Thomas Karl Hoskison, MD, University of Oklahoma College of Medicine

David C. Kaufman, MD, FCCM, University of Rochester

James P. Keating, MD, Washington University in St. Louis School of Medicine

Gary L. Kolesari, MD, PhD, Medical College of Wisconsin

Susan Lehmann, MD, Johns Hopkins University School of Medicine

Ruth Levine, MD, University of Texas Medical Branch at Galveston

Fred A. Lopez, MD, LSU Health Sciences Center School of Medicine at New Orleans

Salvatore Mangione, MD, Jefferson Medical College of Thomas Jefferson University

Kathryn Montgomery, PhD, Northwestern University, The Feinberg School of Medicine

David Muller, MD, Mount Sinai School of Medicine of New York University

Dennis H. Novack, MD, Drexel University College of Medicine

Mark T. O’Connell, MD, University of Miami Miller School of Medicine

Noor A. Pirzada, MD, The University of Toledo College of Medicine

Mark L. Savicakas, PhD, Northeastern Ohio University Colleges of Medicine and Pharmacy

Maria C. Savoia, MD, University of California, San Diego, School of Medicine

John S. Sergent, MD, Vanderbilt University School of Medicine

Paul Shanley, MD, State University of New York Upstate Medical University College of Medicine
The Write a Poem for This Photo Contest was the brainchild of Ted Harris, who loved the intersection of images and imagery.

The charming photograph illustrating the poems was taken by Dr. Anthony Shaw (AΩA, University of Virginia, 1980) of Pasadena, California.

The winning poems in this year’s contest are:

First prize: “Benevolent Instructions” by David R. Downs, MD.

Second prize: “Commencement” by David F. Dozier, Jr., MD.

Third prize: “Adolescent Choices” by H. J. Van Peenen, MD.

Benevolent Instructions

If I’ve told you once, I’ve told you twice
It’s this way, Junior, to the ice.

David R. Downs, MD

Dr. Downs was elected to AΩA at the University of Wisconsin in 1987. His address is: 411 West Merrimac Street, Dodgeville, WI 53533-1499. E-mail: dbdowns@mhtc.net.
Commencement

I see him with his friend,
Describing sights he's just discovered.
I feel a father's pride
As he revels in his furry youth.
This is no time to tell him
Of the Orca, or the sea's
Potential rage and power.
I'll keep my distance,
Keep him safe by nudge
And praising, and let him feel
The buoyant joy of entering the water.
Soon enough he'll grow and hunt for food,
And huddle with the family
When the winter blizzards blast us.
For now, he rules his world,
But I'll be watching.

David F. Dozier, Jr., MD

Dr. Dozier received his MD from Stanford University in 1961. His address is 5168 Mississippi Bar Drive, Orangevale, California 95662. E-mail: david_dozier@sbcglobal.net.

Adolescent Choices

Two friends are making up their minds.
To stay or go? How compromise if
Right wants out and Left wants stay?
Which one of them for both decides?

“That way,” Right points a furry wing,
but Left is skeptical. He thinks
Right too impulsive, immature,
and leaving home so soon unwise.

The next frame of the film will show
them parting. Left will turn away,
the good son going back to mother.
(Shes at the photo's edge, her head
embroidered yellow, white, and red.)

And Right the tempter, Right the other,
will waddle to the right to seek
whatever comes from being born
with an impulsive stubborn streak.

These two age mates, once hatched together,
once childhood friends and now half-grown,
part frostily to grow alone
into a harsh maturity.

One to warm eggs on frozen feet.
One be eaten by a seal.

H. J. Van Peenen, MD

Dr. Van Peenen's address is 74 W. 29th Avenue, Apartment 1103, Eugene, Oregon 97405. E-mail: lkvanp@comcast.net.
The physician at the movies

Peter E. Dans, MD

Wall Street: Money Never Sleeps

Starring Michel Douglas, Shia La Beouf, Josh Brolin, Carey Mulligan, Eli Wallach.


It’s hard to believe that the original Wall Street was released twenty-three years ago. Like The Godfather, it has achieved iconic status with its memorable Oscar-winning performance by Michael Douglas as Gordon Gekko and its signature line “Greed is good.” Gekko accumulates billions by wedding his belief that “information is the most valuable commodity” with a philosophy based on the writings of the sixth-century-BC Chinese warlord Sun Tzu. As Gekko tells his protégé Bud Fox (Charlie Sheen), “I don’t just throw darts at a board. Read Sun Tzu’s The Art of War. Every battle is won before it is ever fought.” To Gekko, the game is “not about the money; it’s about the game between people.” In short, it’s about winning, or in the words of a popular phrase of the time, “the one who dies with the most toys wins.”

Not surprisingly, the sales of The Art of War, which is still used in war colleges, skyrocketed after the film as Gekko wannabes tried to absorb some of its lessons. In the original movie, Gekko is brought down by Fox who, after he is caught doing insider trading, saves his hide by wearing a wire to incriminate Gekko. Before being sent to prison, Gekko sequesters $100 million in a Swiss account in his children’s names.

The sequel begins in October 2001 at Sing Sing, where Gekko is released after having served his eight-year sentence for insider trading and securities fraud. He reclaims his possessions, including an out-of-date cell phone and, when no one is there to meet him, he takes a cab back to “the city.” The scene shifts to 2008 with two Gen Xers in bed as the morning news comes on the television. The woman is Gekko’s estranged daughter Winnie, who angrily shuts off the TV upon hearing that Gekko is back in the limelight promoting his book Is Greed Good? Winnie used to visit her father regularly in prison until her brother died of a drug overdose that she blamed on her father. As seeming recompense for Gordon’s sins, she has become a blogger for an anti-corporate website, Frozen Truth. Her live-in boyfriend, Jake Moore (Shia La Beouf), insists that she ought to hear about him, but she wants none of it. Jake, it turns out, is an up-and-coming Wall Street trader whose “saving grace” is his championing of alternative energy technology to save the planet. He is employed by the firm Keller/Zabel (KZI), headed by a one-time powerful figure Louis Zabel (Frank Langella), to whom Jake is devoted. Zabel

Shia La Beouf in Wall Street: Money Never Sleeps.

20th Century-Fox/Photofest
dodges Jake’s questions about rumors that KZI is on the brink of insolvency, saying, “Are we going under? That’s the wrong question. Who isn’t?” He ends the conversation by giving Jake a $1.45 million bonus, telling him to enjoy it. Jake uses part of it to buy Winnie an engagement ring (although he knows she’s against marriage) and to go out partying. He decides to plow the rest into KZI despite a friend’s warning that the firm, having kept subprime mortgage toxic debt off its books, is in danger of collapse.

Enter Breton James (Josh Brolin), the CEO of Churchill Schwartz, a fictional firm meant to represent a combination of Goldman Sachs and J.P. Morgan. By refusing to support a bailout for KZI, he engineers its destruction as a payback for Zabel’s not bailing out Churchill Schwartz eight years before under similar circumstances. There are ominous meetings of the Federal Reserve Commission in New York as Zabel unsuccessfully tries to trade on old loyalties and friendships by pleading his case before the group that holds his fate in their hands. There are a couple of great scenes on the Upper West Side in Central Park and the subway, involving a distraught Zabel and Jake.

Re-enter Gekko as he goes on the lecture circuit to Fordham Business School to publicize his book. He tells the students that “money is a bitch that never sleeps and she is jealous.” He reiterates his old axiom that greed is good, but too much is not, and that greed is legal. He notes that forty percent of the nation’s profits come from financial services, not production of goods, principally involving what he calls “banks on steroids.” Jake goes up to him after the lecture and tells him that he is engaged to Winnie. They ride the subway together and forge a quid pro quo arrangement in which Gekko helps Jake unravel the steps leading to the destruction of KZI in return for trying to reconcile him with his daughter. This grafting of a love affair, such as it is, onto the picture’s main theme of the convoluted machinations of the Wall Street traders never really works. It seems like an attempt to reach a younger audience while showing that Gekko has some humanity (although not much). He is not averse to duping his daughter and Jake to get back his $100 million, which he promptly turns into $1 billion, showing that he hasn’t lost his old touch.

The film is filled with what might be called “inside baseball,” with references to the cutthroat side of the financial world with its own arcane language of credit default swaps, hedge funds, derivatives, bundling subprime mortgages, and toxic debt. At the time, these terms were totally unfamiliar to the majority of the public whose retirement funding depended on their effects on the markets. They were also ignored by the numerous public watchdogs at the Federal Reserve, the relevant Congressional committees, and the SEC until the crisis exploded into public consciousness in 2008. There are also the references to banks being “too big to fail” and their being given bailouts in which they are awarded 100 cents on the dollar while investors are short-changed. This illustrates the concept of “moral hazard”—someone takes your money and acts differently when insulated from risks than he would if he were fully responsible for losses. The comment in the film is that it is “unethical but not illegal.”

Though long, the film held my interest throughout. What is particularly good about it is the acting, first by Douglas who looks as old, tired, and sick as he is in real life. Look for another Best Actor Oscar, possibly posthumously. Next is the outstanding supporting cast. Frank Langella is great as an old Lion being eaten alive by the unscrupulous young shark played by Josh Brolin. Eli Wallach is also great as Jules Steinhardt, another old Lion, who looks half-dead but is still in control, just as he was in The Godfather until he got bumped off by that cannoli. As he drops his little pearls, he emits a little whistle, one of the best touches in the film that I have to believe he improvised. Susan Sarandon is less effective as Jake’s mother, who is forever cadging money from her son for failed real estate schemes. Also look for Oliver Stone, who pulled a Hitchcock by appearing in both films as a trader. There are many shots of New York’s buildings and a little taste of sex, drugs, and materialistic excess as the young lions get outrageous bonuses. Oliver Stone is one of my bête noirs. His outlandish attempts to rewrite history, his admiration for Castro and Chavez, and his inane pronouncements characterizing Hitler as simply a “product of his time” and extolling the “good” side of Stalin, have discredited him in my view. Still, I must commend him for clearly being ahead of the curve with these two films. He was filming the first one in 1985 and released it in 1987, when the financial crash occurred. As for the second, he was promptly on the case of the 2008 debacle in that the film began shooting that year. He also has highlighted the fact that wealth in America was once based on the production of goods. That has changed in the computer age, when information can make or break individuals and companies and paper has replaced tangible goods as the currency of wealth. He presumably learned that lesson from his father, who was a broker at Shearson Lehman into the 1980s. Maybe he should give up making pictures and be “the canary in the coal mine” in the corner at those federal watchdog group meetings.

**Conviction**

Starring Hilary Swank, Sam Rockwell, Minnie Driver, Juliette Lewis and Peter Gallagher.

Directed by Tony Goldwyn. Rated R. Running time 107 minutes.

I’m conflicted about Conviction. I attended a screening with a friend and if I had driven my own car, I would have been gone after the first fifteen minutes. If I had been watching it at home, I certainly would have gorged it. Here’s why. The film opens in 1980 with a long handheld camera sequence panning over a grisly, blood-soaked murder scene in Ayer, Massachusetts, where a woman named Katharina Brow had
been stabbed over thirty times. This is followed by rapid clips of two children, Kenny and Betty Anne Waters, stealing from and trashing the lady’s house, getting punished by their mother who gave birth to nine children by seven fathers, and being sent to foster homes, intercut with scenes of them as adults. Kenny (Sam Rockwell) is clearly a certifiable sociopath, alternating between turning on the charm and acting out his violent temper. He is repeatedly taken into custody by policemen who profess to like him and excuse his behavior. The scene that really turned me off was where he is in a bar dancing with his little child in his arms at a family celebration. A person he accidentally knocks into questions his taking such a toddler into a bar and at that time of night. Kenny slowly puts his child down and goes over and punches out the guy’s lights. Then he turns on the charm by buying everyone a drink and does a full striptease to the amusement of his family and the patrons. I found this scene hard to believe as well as to stomach.

After the woman is killed, Kenny is confronted by the police and detective Nancy Taylor (Melissa Leo) while sawing wood at his home next door to the murder scene. He fights being arrested and although he has an alibi, Taylor, whom he taunts, is seemingly out to get him. Two years later during the funeral for his grandfather in a Catholic Church, the police march down the aisle and interrupt the service to haul him off to jail in handcuffs. I’ve lived in Massachusetts and that just wouldn’t happen. I realize that this is a movie where the story is fictionalized, but this whole setup is ludicrous.

I hung in for the rest of the story, which was fairly predictable but did raise some interesting issues. Kenny is brought to trial; the evidence consists of his having blood type O, the same as the perpetrator, and testimony that he had indeed been the killer by two ex-girl friends, one of whom he was living with at the time and with whom he had had a child. In 1983, he is sentenced to life without parole. His sister Betty Anne (Hilary Swank) is sure he is innocent and dedicates her life to exonerating him. A high school dropout, she gets her GED, a bachelor’s degree, and a law degree from Roger Williams Law School. With the help of law school classmate Abra Rice (Minnie Driver) and Barry Scheck (Peter Gallagher), co-founder of the Innocence Project, she uses DNA evidence to exonerate Kenny in 2001 after eighteen years of incarceration. During this period her devoted husband leaves her because of her obsession on behalf of her brother and all the time that her studies take away from the family. Her two children receive little attention, given her time at school and work as a waitress in a bar. The children ask to live with their father, although they appear to come back to her when he remarries. It’s particularly interesting that all the publicity and reviews refer to her doing this as a “single mom,” but she certainly didn’t start out that way.

The film ends when Kenny is freed and reunited with his daughter, who had been estranged from him presumably because his weekly letters were intercepted by her mother and she believed that he was the killer. The filmmakers don’t mention that Kenny died six months after his release. The few write-ups that do mention his death say only that he died “tragically,” without giving the details. Actually, he died scaling a fifteen-foot fence taking a shortcut to a convenience store. He fell on his head and was later found dead. In 2009, the town of Ayer settled his estate’s civil rights suit for $3.4 million.

In addition to those cited earlier, there were other problems with this movie. First of all, I was puzzled by how little attention was paid to developing Taylor’s character to gain insights into her willingness to frame Kenny as well as at least one other person. The only reason posed is that it was tough being a female detective in those days. Really! Does that justify framing people? Would they have us believe that women who pioneered in those positions had to do that to gain awards? That’s an insult to them. In addition, she seemed to have suffered no consequences beyond being given a desk job.

I was also struck by the lack of attention to solving the murder. The police spent two fruitless years investigating a murder that cried out for seeking someone who knew the victim and hated her with a passion. Given all the evidence at the crime scene, consisting of fingerprints, hair, and blood, they dawdled before nailing the wrong guy. There was also no mention of using the DNA database even though it was operational years later. The emphasis was on exonerating, not solving the murder. Not only that, but the producers never met with the victim’s children to tell them of the movie, which justly troubled them, another example of how negligent they were in touching base with the principals in the case except for Betty Anne Waters.

Okay, what are the redeeming features? First, the acting. Hilary Swank, who is in almost every scene, although she never seems to age, gives an earnest if unexceptional performance. Still, I predict she will earn an Oscar nomination in this year’s Erin Brockovich secular saint category. Much better is Juliette Lewis in a small role as Roseanna Perry, a reclusive alcoholic girlfriend with rotten teeth and a loopy demeanor who is persuaded by Taylor to testify that Kenny was the killer. Interestingly, Lewis never met the actual person she plays and a blogger who knew the woman said neither she nor her teeth were anything like what was portrayed in the film, although Kenny did knock out two teeth which she got replaced. Getting the story right seems to take a back seat to an Oscar nominating performance. By contrast, Sam Rockwell gives a riveting pull-out-all-the-stops performance that doesn’t sugarcoat Kenny. He should win the Academy award for Best Actor, given that the Academy loves anti-heroes, especially those that are somewhat depraved. Rockwell drew from his hardscrabble youth as a rebel in a home broken by divorce when he was five and as someone who committed petty crimes, to create a character who alternates between Dr. Jekyll and Mr. Hyde.
Hilary Swank and Sam Rockwell in *Conviction*. Photo by Ron Batzdorf.

The film also shows how misleading evidence based on blood typing was in the days before DNA testing was available. The film credits Barry Schenk and the Innocence Project he co-founded in 1992 at Cardozo School of Law of Yeshiva University in 1992 for providing the guidance that got Kenny off. They receive thousands of requests per year and have been able to use DNA evidence, as of November 2, 2010, to exonerate 261 convicted felons, some of whom had been on death row. This figure is impressive, and I couldn’t help but marvel at the fact that DNA evidence could be exculpatory but in the case of O.J. Simpson insufficient to obtain his conviction, in part because DNA testing was impugned by the defense.

Finally, there is an interesting sidebar involving Martha Coakley, the attorney general of Massachusetts who lost the senatorial contest to Scott Brown in 2010. She is portrayed as a villain because she was presumably the Middlesex County District Attorney (DA) when Taylor framed Kenny, and who gave Taylor an award. She’s also shown stonewalling the performance of the DNA testing and then refusing to act on the results when the DNA evidence exonerated him. Actually, she didn’t become the Middlesex County DA until 1998. Furthermore, her office not only facilitated the testing and a second test to corroborate it but she moved to vacate the conviction three days after receiving the test results and he was freed within two weeks. After a screening, she graciously complimented Swank and ascribed the misrepresentation to the need to telescope events in movies. She cheerfully lamented that it hadn’t been a good year for her. It’s hard to understand the motives of the director and screenwriter. I am not a litigious person but I would sue for defamation of character, especially since the film opened two weeks before she stood for re-election as Massachusetts Attorney General.

References

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Reviews and reflections

David A. Bennahum, MD, and Jack Coulehan, MD, Book Review Editors

The Checklist Manifesto: How To Get Things Right
Atul Gawande
New York, Metropolitan Books, 2009
Reviewed by David A. Bennahum, MD (AΩA, University of New Mexico, 1984)

In The Checklist Manifesto, his latest lucid and elegantly written analysis of how to improve health care, Atul Gawande addresses the idea that the simple introduction of checklists to patient care can reduce costs and save lives. In each of his books and essays Gawande has engaged the reader’s interest with stories that illustrate specific points and problems. Here he begins with a surgical case that had been recounted to him by a physician colleague about a patient who had almost exsanguinated from an abdominal stab wound so deep it had cut the aorta.

There are a thousand ways that things can go wrong when you’ve got a patient with a stab wound. But everyone involved got almost every step right—the head-to-toe examination, the careful tracking of the patient’s blood pressure and pulse and rate of breathing, the monitoring of his consciousness, the fluids run in by IV, the call to the blood bank to have blood ready, the placement of a urinary catheter to make sure his urine was running clear, everything. Except no one remembered to ask the patient or the emergency medical technicians what the weapon was.

“Your mind doesn’t think of a bayonet in San Francisco,” John could only say.\(^{31}\)

The staff knew that the patient had been stabbed, but he was comfortable and talking so no one thought to ask what and then consider the possible consequences of a deep stab wound.

In the second case, a patient undergoing surgery to remove a cancer of the stomach suddenly went into cardiac arrest. Because the patient had a low potassium before surgery the anesthesiologist had given him corrective dose of potassium. Gawande in his understated but dramatic style quotes the surgeon.

I was chagrined at having missed this. An abnormal level of potassium is a classic cause of asystole. It’s mentioned in every textbook. I couldn’t believe I overlooked it. Severely low potassium levels can stop the heart, in which case a corrective dose of potassium is the remedy. And too much potassium can stop the heart, as well—that’s how the states execute prisoners.

The senior anesthesiologist asked to see the potassium bag that had been hanging. Someone fished it out of the trash and that was when they figured it out. The anesthesiologist had used the wrong concentration of potassium, a concentration one hundred times higher than he’d intended. He had, in other words, given the patient a lethal dose of potassium.\(^{36}\)

The patient was lucky and survived, but Gawande uses these stories to argue for a simple method to prevent such errors, a checklist. In the first chapter he writes about problems of extreme complexity and how training and practice can achieve astonishing results; but he argues that in medicine we expect miracles such as that offered by penicillin. We have lost the discipline that a methodical approach requires. More than 50 million operations are performed annually in the United States and Americans undergo an average of seven operations in a lifetime. Yet we suffer 150,000 post-surgical deaths each year. Gawande writes:

Moreover, research has consistently showed that at least half our deaths and major complications are avoidable. The knowledge exists. But however supremely specialized and trained we may have become, steps are still missed. Mistakes are still made.\(^{31}\)
To better understand this idea, Gawande turns to the introduction of checklists in 1935 by the U.S. Army Air corps when it was flight-testing the aircraft that would become the B-17 bomber, the famous Flying Fortress. After a number of flight failures the aeronautical engineers realized that the complexity of the modern airplane required not better test pilots but rather a simple method to prevent mistakes, the checklist. He follows this by reminding the reader of the four vital signs to which a fifth sign, pain, has recently been added and asks whether these are not checklists that guide nurses.

Gawande recounts the remarkable experience of Dr. Peter Pronovost at Johns Hopkins in 2001. Pronovost identified five steps that a physician must take to place a central line and then asked the nurses to observe whether every physician unfailingly followed each step. In more than a third of the patients, doctors skipped at least one. Pronovost then persuaded the hospital administration to allow the nurses to stop any physician who had skipped a step. Over the next year “the ten-day line-infection rate went from 11 percent to zero.” p18 Only two line infections occurred over the next fifteen months! Pronovost had proven that checklists raised baseline performance.

Gawande then goes on to explore the use of checklists in several industries and the literature on complexity. He reports that researchers have defined three categories of problems: simple, such as baking a cake; complicated, such as sending a rocket to the moon; and complex, such as raising a child. He notes the evidence in favor of checklists for simple and complicated problems, then asks whether checklists are also helpful in situations of great complexity. To address that question he cites data from the building industry about the construction of massive skyscrapers. And there again he found checklists at every level and "an annual avoidable failure rate of less than 0.0002 percent.” p1

Gawande finds that checklists “are not comprehensive how-to guides, whether for building a skyscraper or getting a plane out of trouble. They are quick and simple tools aimed to buttress the skills of expert professionals.” p118 He writes that on January 14, 2009 the World Health Organization came out with a “Safe Surgery” checklist. The very next day Captain Chesley B. Sullenberger III saved U.S. Airways Flight 1549 after a flock of Canada geese flew into and stalled his aircraft’s engines. While the cool demeanor, good judgment, and experience of the pilots and crew were crucial, no less so were the years of attention to detail and the relentless discipline of their aviation checklists.

This is a marvelous and elegant book. It is an important if very simple—but not simplistic—contribution to the medical literature, as is almost everything that Gawande writes. While most of the book focuses on the application of checklists to technical practice, there is one point that I found very appealing. Gawande describes that as a surgeon introducing the checklist to his own surgical teams he now asks that they begin each operation by reintroducing themselves to each other, thereby leveling the distinctions between physicians, nurses, and technicians and creating a team of the moment for the benefit of the patient. Captain Sullenberger pointed out that he and his crew were also a team, each equally important to the final outcome. At the core of The Checklist Manifesto is a plea for an ethic of relationship between individuals who work together on any project and especially for those with a commitment to excellent patient care.

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The Jump Artist
Austin Ratner
New York, Bellevue Literary Press, 2009
Reviewed by Jeffrey L. Ponsky, MD (ΩΩΩ, Case Western Reserve University, 1971)

In the tradition of Chekhov, Somerset Maugham, and William Carlos Williams comes another MD who writes beautiful and compelling literary fiction. Austin Ratner, a graduate of Johns Hopkins Medical School, turned to fiction as a career after receiving his MD. His debut novel, The Jump Artist is a worthy addition to the ranks of literary historical fiction.

The history that forms the basis for the novel is fascinating and largely unknown. Philippe Halsman was a young Latvian Jew hiking with his father in the Tyrolean Alps when his father fell to his death while walking behind Philippe on the hiking path. In an affair dubbed in Europe “The Austrian Dreyfuss Affair,” Philippe was arrested and convicted of his father’s murder and imprisoned in an Austrian jail for two years, despite only circumstantial evidence. The young, still adolescent Halsman was thrown into a world of horror and only released by a pardon, not an exoneration, after the tireless efforts of his sister Liouba and the assistance of human rights activists all over the world, including such notables...
as Albert Einstein, Thomas Mann, and Eleanor Roosevelt. After being released from prison, the young Halsman was expelled from Austria permanently and went to Paris, to try fulfill his father's dream for him of becoming an engineer or doctor. After much struggle, Philippe became a well-known Parisian photographer, only to flee Paris as the Nazis invaded. Penniless and stateless, Philippe emigrated to the United States and rose to become one of the country's most celebrated photographers of the 1950s and 1960s. His name may be unfamiliar, but his work we all know: the famous headshot of Albert Einstein, Marilyn Monroe in a white dress backed into a corner, Salvador Dali with the curling moustache, the Duke and Duchess of Windsor jumping in the air. Halsman had more Life magazine covers to his credit than any photographer in history.

The story of The Jump Artist is compelling as an arc from despair to triumph, but it is not in the straightforward telling of the story that this strong debut novel succeeds. Rather, Ratner writes the inner life of a human being who has experienced a level of trauma beyond imagination. His vivid descriptions of prison, of helplessness, and of the unlearned, but agonizingly felt, guilt of a victim and survivor are so richly imagined that the reader feels that he comes to know the interior Halsman. We feel his adolescent struggles with a father whom he loved and venerated but was irritated by, his haunting sense of loss, his shocked passivity in the face of victimization, and his self-loathing, so common in victims of trauma. As he tries to make sense of his surreal experience, he moves to art just as the surrealist movement is gaining sway in Europe, and his use of the camera begins to move him into the outside world. The camera captures the full range of human emotion, from the surreal to the playful to the beautiful. As Halsman slowly allows love and art into his life, he reclaims his life. Ratner's use of language and his strong artistic storytelling draws the reader deep into Halsman's world and, as the novel builds, we root for his success, hoping he will overcome the tragedy of his youth. It is not just the story that stays with you, it is Halsman the human being.

As physicians we are always struggling to understand the human condition. This stunning novel does what all truly fine novels should do. It illuminates an understanding of the human condition through its moving exploration of trauma, suffering, and redemption.

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Henry Kaplan and the Story of Hodgkin's Disease
Charlotte De Croes Jacobs
Stanford, California, Stanford University Press, 2010
Reviewed by William M. Rogoway, MD

The 1960s and early '70s were times of significant change in the approach to cancer therapy in this country. As the hazards and potential benefits of radiation therapy became more widely appreciated, it became a powerful treatment tool. At the same time, drugs were developed that not only led to tumor shrinkage, but, in the case of childhood leukemia, could eradicate disease. Henry Kaplan was a towering figure in this heady time of oncologic creativity.

Charlotte Jacobs traces Kaplan's beginnings in Chicago as the older son of Russian immigrants, recounting the early death of his father and his determined mother's struggles to keep the family afloat financially and to further her favorite child's ambitious goals. This story is interwoven with the history of the gradual recognition of Hodgkin's disease as an entity, from Thomas Hodgkin's original cases to Dorothy Reed's defining pathologic description, as well as the development of radiation therapy from a scientific curiosity to a therapeutic tool. By the time Dr. Kaplan graduated from Rush Medical College in 1941, a rudimentary understanding of the disease with which he became so identified existed and radiotherapy had been used as treatment.

Dr. Jacobs outlines Henry Kaplan's rapid professional trajectory from trainee to chairman of Radiology at Stanford Medical School at age twenty-nine; the remainder of the book is devoted to his diverse and impressive scientific and personal achievements. The over-riding theme is that of a brilliant physician driven to ever-more ambitious goals.

Where does one begin? The Stanford linear accelerator that permitted higher energy and more targeted x-ray therapy, the willingness to deliver higher doses of radiation to wider fields in the quest for Hodgkin's disease cure, the identification of the mouse leukemia virus and the search for a human viral etiology for malignancy, attempts to create antibodies to human tumors. Kaplan gained
credit for all these, sometimes leaving the contributions other investigators played in these advances forgotten or little noted. While he played a pivotal role in the clinical development of the accelerator and aggressively pushed its use forward, other clinicians at other centers were moving in the same direction. Dose escalation and contiguous uninvolved field therapy built heavily on the work of the Canadian Vera Peters, and an understanding of the logical pattern of Hodgkin’s disease spread was very much a product of his colleague Saul Rosenberg. Kaplan never did identify the elusive human tumor virus and monoclonal antibody success was left to others.

Kaplan’s lasting scientific achievement was the rigorous investigation of Hodgkin’s disease. He and his associates pioneered the randomized clinical trial, answering one question and proceeding to the next in single institution studies with the single-minded goal of curing the disease and lessening the complications of therapy.

Concurrent with his science, HSK, as his associates knew him, attempted to reshape Stanford’s medical school in his image. From the time he became chairman of Radiology, he assumed a leadership role in creating a research-oriented school as the university moved its medical school campus from San Francisco to Palo Alto. He was instrumental in recruiting a sterling faculty that included three future Nobel Laureates. As his department grew, he envisioned a nationally sanctioned comprehensive cancer center, but as his dream threatened to dominate the school, close colleagues withdrew support and the center never happened. This was a devastating and embittering defeat. His struggles, sometimes very contentious, with deans and other faculty were legendary, his failures and successes are carefully chronicled.

There were forays as well in the national scientific scene and HSK played a key role in refining the 1971 National Cancer Act that paved the way for a dramatic increase in funding for cancer research and NCI independence.

Throughout his career, HSK developed a few close professional and personal relationships. These were significant scientists whose common characteristic seemed to be the same drive, ambition, and dismissiveness toward others less forceful. Perhaps most interesting is the thorough account of his evolving friendship with Dr. Vincent DeVita, who was key in developing curative combination drug therapy for Hodgkin’s disease that rivaled Stanford’s radiotherapy efforts and who ultimately became the director of the National Cancer Institute. In interviewing over one hundred of his colleagues, patients, friends, and family members, Dr. Jacobs was able to bring detail to HSK’s fascinating and multifaceted life and his impact on others. Particularly revealing are first-person recollections of confrontations with associates and friends whose views differed from his. His close, though imperfect, relationship with his children is tenderly presented.

Dr. Jacobs has authored a loving account of a powerful figure. While the chronology is painstaking, I’m not sure that one comes away with a balanced picture of this giant of American medicine. As Dr. Jacobs writes toward the end of her book, “anonymity wasn’t Henry’s way. If you had the chance to reach your goal, you grabbed it.”10 He began poor with a very visible physical deformity, a brilliant mind and a desire to achieve. He worked tirelessly and with tremendous self-assurance built a scientific career that was outstanding. While not detailed in the book, at a time when radiation oncology was a relatively new discipline, his early trainees became department chairs at half a dozen academic medical centers. He had talents and a drive beyond most, but alienated many associates and his own brother. While warm and compassionate toward patients, he could be dismissive to associates. While he was very public in much of what he did professionally, his humanitarian work was carried out with much less flourish. He was a complex and flawed man, but indeed a visionary who brought a scientific rigor to the practice of oncology and helped move Hodgkin’s disease from an untreatable malignancy to one for which cure is now the rule. Dr. Jacobs’ book is a riveting read, meticulously covering a time of dramatic creativity in American medicine while also revealing the personal infighting that took place behind the scenes.

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John Kastor
New York, Oxford University Press, 2010, 271 pages

Reviewed by Jack Coulehan, MD
(AΩA, University of Pittsburgh, 1969)

When I did my internship at the Hospital of the University of Pennsylvania, John Kastor was a rising star in Penn’s Division of Cardiology. He was also one of my favorite attending physicians, partly because of excellent teaching and obvious commitment to
patients, but also because of his compassion for students and house officers. At the end of my rotation with Dr. Kastor, he invited our whole team to his home for dinner. And a splendid evening it was! I remember that dinner as an island of warmth and conviviality in the often turbulent sea of internship. Since then, Kastor has become one of the nation’s most prominent cardiologists and a leading figure in American medical education. He is the author of several important books on academic medicine, including Governance of Teaching Hospitals (2003), Specialty Care in the Era of Managed Care (2005), and Selling Teaching Hospitals and Practice Plans (2008). These works focus, in particular, on issues of governance in large health care institutions.

In his new book, The National Institutes of Health: 1991–2009, Kastor turns his attention to “the premier organization for performing and funding biomedical research in the United States.” The book is primarily a description of the structure, function, mission, finances, and priorities of the NIH over nearly two decades, a period that spans the terms of three NIH directors: Bernadine Healy, Harold Varmus, and Elias Zerhouni. While the author presents plenty of “hard” historical facts, the real energy of his book arises from its human perspective: 222 interviews of present and past NIH administrators and scientists and other knowledgeable observers, conducted over a nearly two-year period. The text relies heavily—and appropriately—on quotations from these interviews, which provide the reader with a sense of living history.

The NIH consists of twenty research Institutes and seven Centers, five of which serve as providers of infrastructure and support for the institutes. The NIH budget in 2008 was around $29 billion, eighty-five percent of which supported extramural research, i.e., grants to universities, hospitals, and laboratories throughout the United States. Another ten percent funded the intramural research program, which employs over one thousand scientists at its Bethesda campus, as well as a large number of trainees. The final five percent of the budget was devoted to administration. The individual research Institutes range in size from the enormous National Cancer Institute (NCI, $4.8 billion budget) and National Heart, Lung and Blood Institute (NHLBI, $2.9 billion) to the tiny National Institute for Nursing Research (NINR, $139 million). It requires over seventy separate administrative entities—and their acronyms—to fully characterize the structure and governance of the NIH. Fortunately, the reader need not internalize most of this alphabet soup to gain a basic understanding of the organization, although for the interested masochist Kastor provides an appendix listing every single acronym and its meaning.

As an academic physician, I found some of the trends described in The National Institutes of Health especially interesting. First, although I was aware that the NIH budget had grown in the 1990s, I had no idea of how much. During the six-year period 1998 through 2003, its budget more than doubled from $13.6 to $27.1 billion, an average increase of about fifteen percent per year. Even more amazing was the sustained average annual eight and a half percent increase over the preceding twenty-seven years (1971–1997). On the other hand, during most of the Bush era (2003 through 2008), the NIH budget, when corrected for inflation, suffered an annual decline.

Another interesting point was the historical trend of the NIH’s intramural research training program. Kastor writes of the “yellow berets,” physicians commissioned in the United States Public Health Service and assigned to the NIH in the 1950s, ’60s and ’70s, who provided the nation with a large pool of budding physician scientists. In subsequent decades, as the doctor draft ended and NIH research training became less attractive to young physicians, the size of this pool decreased, resulting in the NIH having more difficulty recruiting physician investigators for its intramural programs. However, the NIH still provides the major source of financial support for the training of physician scientists through its Medical Scientist Training Program (MSTP), which supports MD/PhD students in medical schools throughout the country.

Finally, I learned for the first rime about the “Roadmap for Medical Research,” a strategic plan developed in 2002 and 2003 by then-NIH director Elias Zerhouni. Zerhouni wrote, “It was clear to me that science had changed, but the NIH had not.” A “convergence of concepts and methodologies” had made many of the traditional rigid distinctions between disciplinary Institutes outdated. Zerhouni initiated a process to answer such questions as “What are today’s scientific challenges?” and “What are the roadblocks to progress?” This led to a strategic plan, which, among other things, placed new emphasis on clinical research. Zerhouni also set aside funds for Roadmap projects, a practice later endorsed by Congress when it created the “Common Fund” as a separate pool of money to support the initiation of innovative interdisciplinary projects.

In The National Institutes of Health: 1991–2008, John Kastor has written a clear, concise, and highly informative book that will serve as a useful entry-point for anyone interested in gaining a basic understanding of the structure and inner workings of the NIH. As a bonus, the book also presents a human perspective on the NIH’s recent history, with fascinating insights on the process, as well as examples of the content, of NIH intramural research.

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Letters to the editor

Poetry and Ted Harris

I never met Ted Harris. Never spoke a single word to him. I only knew him as the editor of a journal I enjoyed reading. About ten years ago, I sent Dr. Harris a letter expressing my desire to serve on The Pharos editorial board. I practice and teach internal medicine in a small community in Central Virginia. Although I’ve been interested in the humanities since college, there was little in my CV to suggest I was qualified to serve. He did not grant me a position, but asked me to review submissions. I accepted. I was eager to review articles on history, philosophy, and literature. Every few months, Ted would send me a poem. I waited for essays to be sent; they never came. What did I know about poetry? Not much. As soon as a poem arrived, I analyzed the poem as best I could and immediately returned it. This went on for years. I began to study poetry, and read it every day. You know how the story ends. Ted (and Debbie Lancaster) gave me a position on the board in 2004.

It’s been a wonderfully rewarding experience, and I’m forever grateful. Ted gave me something else: poetry. He also showed me how to open academic doors for others.

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Vicarious respect for Ted Harris

I only met Dr. Harris briefly, and that was unrelated to medicine. I barely knew him personally, yet I think I had an insight many did not. Imagine my surprise when receiving this summer’s Pharos, and immediately recognizing him on the cover. Needless to say, I was a little stunned, as this to me was so unexpected.

Let me backtrack a little to the early 1960s. I had recently moved with my parents to a small bedroom community on the West Shore of Harrisburg, Pennsylvania. My Latin teacher that year was a stern taskmaster, the way it used to be—and perhaps should still be. No nonsense was tolerated, and total respect was demand by Mrs. Harris. Somehow I survived. By my senior year, I had enough seniority to get a coveted paper route. By chance, she became my customer. She lived alone in a modest home that had a large, flat front yard. More on that later. I eventually graduated from Camp Hill High School, some ten years after her son had.

Fast forward to my general surgery residency in 1975 at the Dartmouth Affiliated Hospitals in Hanover, New Hampshire, and White River Junction, Vermont. In those days, residents were indeed residents. We leaped at any chance to do something “normal,” and the annual medical school tennis tournament was just that excuse. My doubles partner and I were soundly defeated in the first round by none other than Ted Harris, that being my only personal encounter. Soon after that, though, he brought his mother to live in Hanover. She would often visit and go shopping with my wife, also a Camp Hill alumna. Mrs. Harris proved to be hugely independent, intelligent, and quite friendly, all surprising attributes considering my opinion as an adolescent. By the way, she informed us, her front yard had been a grass tennis court, where her son had learned the game well, permitting our paths to eventually cross.

Can it be just a coincidence how all our lives are intertwined in some way? The passing of Dr. Harris abruptly engendered in me a fear of my own mortality. Yet is only DNA immortal as it passes from one generation to the next? I think not. The human lives we as physicians and teachers touch and influence daily, no matter how briefly, in some intangible way create another pathway to gain a sense of immortality, through their achievements as well. We both came from a small town, yet Ted Harris rose from humble beginnings to achieve grander things, to change the lives of many. His revitalized Pharos became an extension of his personality that again influenced me later as a “senior” attending. Hopefully, it will survive his loss. The world will be a lesser place without him.

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Instructions for Pharos authors

We welcome material that addresses scholarly and non-technical topics in medicine and public health such as history, biography, health services research, ethics, education, and social issues. Poetry is welcome, as well as photograph/poetry combinations. Photography and art may also be submitted. Scholarly fiction is accepted. All submissions are subject to editorial board review. Contributors need not be members of Alpha Omega Alpha. Papers by medical students and residents are particularly welcome.

Submissions must meet the following criteria:
1. Submissions may not have been published elsewhere or be under review by another journal.
2. Essays should have a maximum of 15 pages (approximately 5000 words), and be submitted in 12-point type, double-spaced, with one-inch margins. They should be accompanied by a covering letter and a title page with the word count (or page count), return address, and e-mail address. Papers exceeding the page count noted will be returned to the author. References should not exceed 20 unique items (see below).
3. Poems or photograph/poetry combinations should be in 12-point type, with one-inch margins, with the author's name, address, and e-mail address on the first page.
4. Electronic submissions are preferred. Send them to info@alphaomegaalpha.org. Or send by mail to Richard L. Byyny, MD, Editor of The Pharos, 525 Middlefield Road, Suite 130, Menlo Park, California 94025.
5. After peer review, comments on the manuscript will be sent to the author along with an editorial decision. Every attempt is made to complete preliminary reviews within six weeks.
6. The editors of The Pharos will edit all manuscripts that are accepted for publication for style, usage, relevance, felicity, and grace of expression, and may provide appropriate illustrative material. Authors should not purchase illustrative material because the editors cannot guarantee that it will be used.
7. In accordance with revised copyright laws, each contributor will need to sign an Author's Agreement, which will be sent with the edited galleys. Information on copyright ownership and re-publication of articles is detailed in the Author's Agreement.

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Authors are responsible for the accuracy of citations and quotations in their papers. Once a manuscript has been accepted for publication, therefore, the author will be required to provide photocopies of all direct quotations from the primary source material, indicating page numbers. (Please mark the quoted material on the photocopies with highlighter.) In addition, the editors will require photocopies of all references: the title page and copyright pages of all books cited, the first and last pages of book chapters cited, and the first and last pages of journal articles cited, as well as the Table of Contents of the particular issue of the journal in which the cited article appeared. The foregoing items will be used to verify the accuracy of the quotations in the text and the references cited, and to correct any errors or omissions. The photocopies will not be returned.

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Citation of web sites as references is discouraged unless a site is the single source of the information in question or has official or academic credentials. Examples of such sites are official government web pages such as that of the National Institutes of Health. Encyclopedia sites such as britannica.com are not primary references.

Leaders in American Medicine

In 1967, as a result of a generous gift from Drs. David E. and Beatrice C. Seegal, Alpha Omega Alpha initiated a program of one-hour videotapes featuring interviews with distinguished American physicians and medical scientists.

The collection has been donated to the National Library of Medicine, which will maintain it for permanent use by scholars visiting the library. A listing of tapes available for loan from AΩΑ can be found on our web site: www.alphaomegaalpha.org, or by contacting Debbie Lancaster at d.lancaster@alphaomegaalpha.org or (650) 329-0291. Those wishing to purchase copies may do so by contacting Ms. Nancy Dosch, manager, Historical Audiovisuals, History of Medicine, Building 38, Room 1E-21, 8600 Rockville Pike, Bethesda, Maryland 20891. Telephone (301) 402-8818, e-mail nancy_dosch@nlm.nih.gov.