

AATS 2012: “To model excellence”

Craig R. Smith, MD

“...the children’s eyes
In momentary wonder stare upon
A sixty-year-old smiling public man.”

—W. B. Yeats, *Among School Children*¹

In Dr Schaff’s exceedingly generous introduction, you have learned more than you need to know about this 60-year-old smiling public man. These introductions often evoke 2 reactions: of predestination and inevitability, looking back, or uncertainty, even impossibility, when trying to imagine looking forward from the past. I score myself highly on the impossibilities.

Not that many years ago, I stood in the back of this meeting and very sincerely doubted that I would ever be a member, let alone your President, and for this miracle I am humbly grateful to you all—and, like everyone who has stood here before, I owe much of my good fortune to many, many others, who I cannot begin to enumerate. A select few include my administrative staff (Figure 1), our physician’s assistants (Figure 2), the cardiac anesthesia team (Figure 3), and the perfusion team (Figure 4). Seymour Schwartz is an amazing, multitalented man who convinced me to train at Columbia Presbyterian—once he accepted that I could not be dissuaded from what he called “that cardiac junk” (Figure 5). At Columbia, I had the good fortune to be trained by many outstanding surgeons—Henry Spotnitz, Tom King, and Fred Jaretzki and, in very special ways, by Eric Rose and Fred Bowman (Figure 6). I also had the privilege of training under 2 previous American Association for Thoracic Surgery (AATS) presidents, Jim Malm and Keith Reemtsma (Figure 7). Dr Malm was my host at my first AATS meeting, and I am honored that he and Connie are here today. Standing out, even among these standouts, are the 4 people who make it all work every day, and I am flattered that Angie, Suzanne, Dana, and Larry are also here today (Figure 8). Last, but not least, I thank the outstanding group of

surgeons I am privileged to call colleagues, who support me in so many ways (Figure 9).

Most of all, I thank my family. Trish—my beautiful wife for the past 41 years—all 3 of my children, 2 sons-in-law, my parents, my brother, 1 of my 2 sisters, and assorted relatives—who are honoring me by being here today. While reviewing previous Presidential addresses, I described to Trish an address that I thought handled the expressions of gratitude to family exceptionally well. She did not disagree but observed that the stream of family life flows rapidly on; surgical wives are among the toughest and most resourceful, independent women she has ever known, and it is the surgeon who does the sacrificing. Your challenge, she said, is not to thank your family for their sacrifice, but to make clear why the sacrifices were worth it to you. I imagine there is more than 1 large ego here today who would find that a little deflating, but, as usual, she has a point. Family life is the most important thing we sacrifice at the altar of healing. Individually and collectively, theirs is a better story than mine, a story you would be privileged to hear some day, and no matter how well I succeed today in ennobling this thing that we do, without the love for and from my wife and my family, none of it would be worthwhile.

Four score and 15 years ago, our fathers brought forth this Association in its first annual meeting, conceived in scholarship, and dedicated to the proposition that we should model excellence (Figure 10). We are met today on what feels to our profession, our specialty, and this Association like a great battlefield, beset on all sides by economic, social, and political forces outside our control. At the battle of Gettysburg, Joshua Chamberlain had too few men to defend the critical, extreme flank of the Union line on Little Round Top unless he could persuade 120 deserters to rejoin the battle. He succeeded with 114,^{2,3} and the Union survived, not through threats, punishments, or tangible rewards, but because Chamberlain gave an affirming speech that invoked higher principles. It became everyone’s battle, with common goals. In my last full measure of devotion to this Association, I will humbly attempt to emulate Chamberlain’s feat.

I will look first for evidence of these principles as they are expressed in 2 activities of this Association, beginning with the structure of our Annual Meeting. In the perpetual search for the perfect balance between elitism and inclusiveness, sermon and colloquy, science and empiricism, most organizations such as ours are finding the Transcatheter Cardiovascular Therapeutics model seductive. Topic organization is proactive. The event organizers select content and assign speakers, ensuring that the selected topics

From the Department of Surgery, Columbia Presbyterian Medical Center, New York, NY.

Disclosures: Author has nothing to disclose with regard to commercial support.

Read at the 92nd Annual Meeting of The American Association for Thoracic Surgery, San Francisco, California, April 28-May 2, 2012.

Received for publication May 18, 2012; accepted for publication May 24, 2012.

Address for reprints: Craig R. Smith, MD, Department of Surgery, Columbia Presbyterian Medical Center, 177 Fort Washington Avenue, Milstein Building, 7th Floor, 7GN-435, New York, NY 10032 (E-mail: crs2@columbia.edu).

J Thorac Cardiovasc Surg 2012;144:749-58

0022-5223/\$36.00

Copyright © 2012 by The American Association for Thoracic Surgery

<http://dx.doi.org/10.1016/j.jtcvs.2012.05.075>



FIGURE 1. Administrative staff.

are covered in state-of-the-art lectures delivered by experts, followed by skillfully moderated panel discussions between the experts on the dais. Very little peer-reviewed original content is presented, with the exception of “late-breaking clinical trials.” Invited or spontaneous critical analysis of presentations is not a priority, and little occurs. Easily ingestible and professionally presented content that requires little of the audience beyond assimilation is an undeniable advantage of this approach. With about 12,000 attendees, the Transcatheter Cardiovascular Therapeutics meeting has become the third largest in cardiology and has stolen much of the excitement, and one third of the attendance,

from the American Heart Association and the American College of Cardiology.

In contrast, our meeting format would appear to have many disadvantages. Topic organization is reactive, driven by content that emerges from highly competitive peer review, with an acceptance rate of less than 10%. Quality is impossible to assess completely until the data have been presented and discussed. Invited and spontaneous critical analysis of presentations is essential to the process. For these reasons, the content of our program is inherently messier and less predictable. How could that possibly express a higher principle? Because therein resides the



FIGURE 2. Physician’s assistants.



Division of Cardiothoracic Anesthesia

FIGURE 3. Cardiac anesthesia team.

thoughtful, analytic, and contentious progress of knowledge—and something more. Peer review is the guarantor of integrity in science, and good peer review is facilitated by expertise, but should not end with expertise. Effective moderators apply simple logic, curiosity, and knowledge of experimental design to ask intelligent questions of work outside their areas. Exactly the same ability to transcend the boundaries of specific expertise is even more necessary in any leadership role. I am certain Alexander was a fine equestrian and swordsman but that was not what

made him “Alexander the Great.” When it works, our annual meeting becomes an intellectual marketplace that contributes, not only to the quality of the science presented, but also to the breadth and depth of the presenters, discussants, moderators, and leaders of our specialty. Some elements of our classic mode may be worth preserving—and its value may increase if adoption of the Transcatheter Cardiovascular Therapeutics model makes it more rare.

Does our Association have values to export? One evening last month during the Asian Society for Cardiovascular and

**FIGURE 4.** Perfusion team.



FIGURE 5. Seymour Schwartz, MD, Professor Emeritus, former Chairman of Surgery, University of Rochester School of Medicine.

Thoracic Surgery meeting in Indonesia, a group of us enjoyed dinner at a hot, smoky barbecue joint, over several liters of Bintang. A surgeon originally from Europe, now practicing in Singapore, after describing his training in Europe and in several institutions in North America declared “What America exports is excellence!” I could stop there! From 1 perspective, this Association already has a solid international presence. AATS is the first such organization in the world. The leaders of all the major organizations devoted to our specialty outside North America are members

of this Association. International membership has increased more than 50% since 2002. Also, 48% of the attendees at our Annual Meeting and almost 60% of the attendees at the Aortic Symposium and Mitral Conclave are from outside North America. International members on the committees and the Editorial Board have increased from 4 to 19 in the previous 10 years. Both the Membership Committee and the Program Committee have 2 international members. This year, 2 international members are being added to the Education Committee, and an International Advisory Council has been created that will have 3 permanent positions for international members. We have co-sponsored postgraduate symposia jointly with the Asian Society for Cardiovascular and Thoracic Surgery for the past 5 years, jointly with European Society for Thoracic Surgery for the past 4 years, and will co-sponsor a Symposium with the Turkish Society for Cardiovascular Surgery in November. I submit that there is much we are already exporting. What more do we have to offer?

In the past, teaching basic techniques was a contribution. Today, as the Asian meeting last month has clearly shown, many highly skilled surgeons are practicing outside North America performing large numbers of very complex procedures, from whom we can learn. It is equally clear that the politics of medicine are local—or at least national—and our expertise in managing the interface between our specialty and our federal government is unlikely to translate. Although it would be appealing to help establish an infrastructure of opportunity across vast populations with large disparities in access, the challenges are sociopolitical and



Henry Spotnitz



Fred Bowman



Eric Rose



Tom King Fred Jaretzki

FIGURE 6. Henry Spotnitz, Tom King, Fred Jaretzki, Eric Rose, and Fred Bowman.

If you are thinking this could not get worse, I now invite you to hold your breath and watch me step squarely on the third rail of medical politics. For the past 23 years, since the Bell Commission in New York State in 1989, our profession has been preoccupied with the working conditions of our trainees, represented most visibly by increasingly rigid work hour restrictions. I readily concede that inflexible work hour restrictions, as a method of ensuring adequate rest, might be a very practical strategy for sustaining the performance of vigilance tasks. Vigilance is a relatively small component of surgery. In surgery, particularly the type we do, it is more often the challenge to control the effects of stimulation by the task than to maintain the arousal necessary for vigilance. Crises in surgery do not respect the clock, and “hand-offs” in crisis are difficult, if not irresponsible. Work hour rigidity that might make sense in pediatrics or anesthesia obstructs the training and practice in surgery and persists with absolutely no evidence that patient or resident safety has been improved. Even worse, the monitoring method makes liars out of outstanding residents. Also, if these well-established lifestyle embellishments make our specialty more palatable to Generation X-Y-Z, why all the concern about attracting applicants?

I realize that resident hour regulations are locked in the innermost chambers of the castle of political correctness, from which they are unlikely to be sprung any time soon. Also, having capitulated to the threat of Federal regulation 10 years ago, the political and bureaucratic inertial forces are formidable. I can imagine an evolutionary adaption that could be palliative. Compress residency dramatically. Follow that with a period of tutorial practice during which each licensed, Board-eligible surgeon has a specific number of years to complete the requirements for the Board examinations, something similar to the Tenure process, with an option to extend the clock for serious investigators. Graduated, individualized transition to primary responsibility under reduced regulation, and perhaps a living wage, could accrue. I am not advocating a return to 120-hour work weeks. Those are not coming back. I am suggesting that the quality of training would be improved by the relief from the inflexibility of regulations that are misguided as applied to surgeons. Obvious obstacles to my proposal include the American Board, and my implication that surgeons are somehow different, which will be very unpopular in a society that is uncomfortable with distinctions on almost any basis. Would hospitals balk? I doubt it. Would Federal regulators pounce? Perhaps, but could it be worse?

There will be many who find my comments on this topic contrarian and regressive, and certain to drive away the best and brightest. I will be accused of defiling the tender maiden of teaching to worship the stone idol of learning-in-service. I respond that we are educating 25- to 35-year-old adults in a learning environment in which “teaching” must be

defined very broadly. They, and we, are learning together, in an intense life-and-death enterprise. It is my bias that less regulatory architecture might increase our attractiveness to exactly those self-sorting residents and students who have the traits that place them in our talent pool. Permit me an analogy. Just as there are many young people attracted to healthcare, there are millions of people who climb things. Of those millions, just over 3000 climbers have reached the summit of Mount Everest, with a fatality/summit ratio of 4.3%. A few more than 150 climbers have reached the summit of Annapurna, where the fatality/summit ratio is 38%.⁶ The hazards and daily deprivations of Himalayan ascents are legendary. The best Himalayan mountaineers reflect on these human losses, analyze their failures, and cannot wait to try something smarter on the next attempt. Lives are saved and summits achieved, but the extreme difficulty of the endeavor is not eliminated. These are not the dermatologists of mountaineering, but those for whom a particular type of daunting goal is worth every step of an arduous journey. Understandably, other climbers might judge this group obsessive, reckless, self-destructive—even crazy—but no one in that select group is insisting that their critics climb the Himalayas. The point of my analogy is obvious. Show them Himalayan goals, and we will attract those residents and medical students.

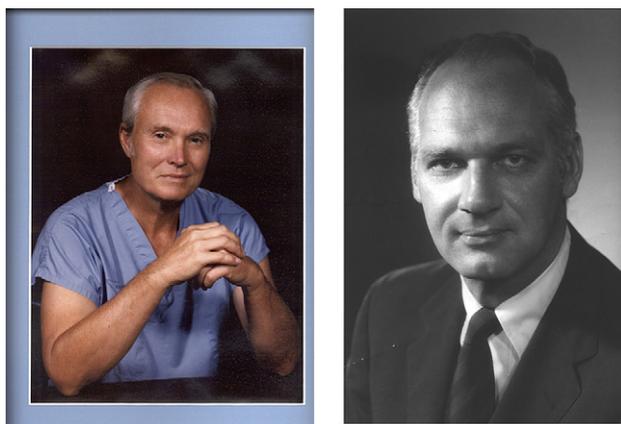
I realize I am still flying into strong societal headwinds. I alluded earlier to vigilance tasks. The classic example, much studied experimentally after World War II, was the task of watching a radar screen for blips signifying aircraft or submarines. I find it revealing that the research on vigilance flourished after World War II in response to practical performance problems related to fatigue. The objective was to maximize human performance, accepting that challenges to performance such as sleep deprivation would remain. Today, our society is much more concerned with the well-being and self-esteem of the performer and prefers to wish challenges away rather than pursue effective methods to surmount them.

Amy Chua gained sensational notoriety in 2011 for her book *Battle Hymn of the Tiger Mother*.⁷ She was widely accused of child abuse for the methods she described using to drive her 2 daughters to excel. Buried in shocking descriptions of what she calls “Chinese parenting” is a very important point that has been almost universally overlooked:

“Chinese parents...assume strength, not fragility....Chinese parents demand perfect grades because they believe that their child can get them.”

We need to *assume strength and not fragility* in the men and women who are drawn to our specialty. Let them be pushed, and let them push themselves (Figure 11).

Time to shift from what’s wrong to what’s right, and to why we have a future worth seeking. For a little inspiration, consider this dramatic arc, as presented by John Milton in



James R. Malm
66th President of AATS

Keith Reemtsma
71st President of AATS

FIGURE 7. Jim Malm and Keith Reemtsma.

the solutions beyond our reach. What we can contribute is to stand beside our like-minded international colleagues to support an infrastructure of rigorous self-analysis that helps string together islands and archipelagos of technical and scientific excellence. Basic science and clinical research arising from anywhere in the world are improved by discussion of experimental design, laboratory and statistical methods, clinical trial design, appropriateness of endpoints, follow-up, and control of selection. In short, the infrastructure of rigorous self-analysis is just another way to describe a culture of peer review and a focus on the development of academic leaders. If you believe that sounds close to the central mission of AATS as just described in the context of our Annual Meeting, then I am succeeding.

In the larger arena outside this Association, one source of unease in recent years has been a sense that the “best and brightest” are being diverted to other professions and to other specialties within our profession. Underlying this concern is an assumption that the “best and brightest” are

easily defined and were our exclusive property in the past, when neither is true. Even at a time when our profession felt more secure in its appeal, there were very bright undergraduates who had no interest in medicine whatsoever—Steve Jobs comes to mind. Medicine is a service profession, to which students are attracted by a variety of life experiences, including illness in themselves or others, exposure to family members in service professions, and excitement about translational science. Service to others is a slowly gestating proclivity that is not suddenly born during the senior year, in response to the appearance of recruiters on campus. Our curricular prerequisites alone guarantee this. I discussed this point with Columbia’s office of pre-professional counseling. They do not believe a shift has occurred away from medicine toward banking or anything else. The most notable shift recently has been away from law school. Since the year 2000, the average GPA and MCAT scores for matriculants to US medical schools have steadily increased, now sitting at 3.67 and 31.1, respectively—they certainly have not decreased.⁴ I conclude that we have a relatively stable pool of bright, motivated undergraduate and postbaccalaureate students gravitating toward medicine.

Be that as it may, for at least 10 years, we have also struggled with a concern that the best and brightest of these medical students and residents are being diverted to other specialties. Using metrics such as the United States Medical Licensing Examination scores, strength of bibliography, and membership in Alpha Omega Alpha, there is no question that the most competitive residencies today are dermatology, plastic surgery, radiation oncology, otolaryngology,⁵ and similar lifestyle-insulating specialties. We could use this as grounds for despair that the best potential thoracic surgeons are being seduced to dermatology, leaving us the sediment of each medical school class, and console ourselves that future patients with heart disease are getting what they deserve for raising a self-involved generation



Angelica Bermudez Suzanne Seda Dana Reed, NP

Larry Beilis
Department Administrator

FIGURE 8. Angie, Suzanne, Dana, and Larry.



FIGURE 9. The outstanding group of surgeons I am privileged to call colleagues.

addicted to lifestyle. I favor a more charitable and optimistic view. All medical students are extremely talented, intelligent high achievers—remember, the average GPA is 3.67. Just as is true at the undergraduate level, there is a self-sorting process that does a reasonably good job of matching interests and aptitudes with specialties. Vogues such as dermatology simply upregulate competitive behavior in the same types of students who always gravitated to dermatology. The quality of the students applying to our new integrated programs has convinced me that the types of individuals who become great thoracic surgeons are still plentiful, perhaps with less upregulated performance metrics compared with some of their classmates. However, in the most important respects, they remain the same best-and-brightest we have always attracted. Sediment, indeed...where gold collects in the pan.

We Model Excellence



Promoting scholarship in Thoracic and Cardiovascular Surgery

FIGURE 10. Emblem of American Association for Thoracic Surgery.

Therefore, I argue we have a fair shot at a great talent pool, composed of men and women with the character traits that make great surgeons. This is not to deny that the number of residents applying to traditional cardiothoracic residencies has declined precipitously, and many positions remain unmatched. Although I believe the quality of the top candidates is unchanged, the average quality of applicants has clearly declined. So how should we capitalize on the talent pool available to us and reverse this trend?

Here I will disagree with most of you. The prevailing view is that the most talented Generation X-Y-Z residents are fleeing from grueling high-stress residencies, in which learning under fire takes precedence over what is called teaching. Consistent with this view, our major organizations have staked millions of dollars on a centralized apparatus focused on improving educational processes, hoping that demonstrating our devotion to didactics and personal needs here at “Club Surg” will save the day. This strategy focuses attention on improving the journey, not the destination, and ignores our much more fundamental failure to project an image of a future worth pursuing. In my Departmental and Divisional roles, I interview a large number of medical students and young residents each year. Far too many of them describe meeting cardiac surgeons who actively or passively broadcast deep despondency about our future. Yes, the 1980s are over. It is no longer possible to become wealthy slapping on vein grafts every day. Percutaneous coronary intervention has allowed our formerly dependent gatekeepers in cardiology to steal coronary patients from us—and now, the final insult, percutaneous valves! I am here to tell you that young people who have heard these lamentations are not reassured when told we are determined to make it easier and more pleasant to get there—to get where?

Assume Strength, Not Fragility



We Model Excellence

FIGURE 11. Emblem of the American Association for Thoracic Surgery with injunction added.

*Paradise Lost*⁸: In a profound fall from grace, a strong leader has been cast out of Heaven and condemned to eternal punishment, because of hubris, envy, and misjudgment of his strength against his opponents. We find his co-conspirators gathered despondently in the fire and brimstone of their new home, discussing what to do next.

First to speak is Moloch. He exhorts,

My sentence is for open war: of wiles
 More unexpert, I boast not
 ...let us rather choose,
 Armed with Hell's flames and fury all at once
 O'er Heaven's high towers to force resistless way
 Turning our tortures into horrid arms
 Against the torturer...
 ...which, if not victory, is yet revenge.

"My sentence is for open war... which, if not victory, is yet revenge"! Moloch is a zealot with one response mode, who prefers the Pickett's Charge approach. If you think my opposition to the regulated workplace falls in this category, keep it to yourself.

Belial is a sycophant, who says,

First, what revenge? The towers of Heaven are filled
 With armed watch, that renders all access
 Impregnable...
 ...this is now
 Our doom; which if we can sustain and bear,
 Our supreme foe in time may much remit
 His anger...

In other words, cower, and hope for mercy.
 Mammon, more energetically, offers,

We can create and...
 Thrive under evil, and work ease out of pain,
 Through labor and endurance...

...this desert soil
 Wants not her hidden lustre, gems, and gold;
 Nor want we skill or art; from whence to raise
 Magnificence; and what can heaven show more?

Which is to say, we can make the most of our situation.
 Finally, Satan makes the leap:

...What if we find
 Some easier enterprise? There is a place
 ...another world ... the happy seat
 Of some new race called *Man*...

A very successful enterprise it has been, exploiting that new race called Man! That is innovation—but please note that in this dramatic scene only the idea ("there is a place") is presented. Discovery (finding Adam and Eve in the garden), invention (using the the apple to subvert Eve), and the collective thrust of the parts culminating in "an easier enterprise" are described later in the poem. As this illustrates, innovation is a complex process that begins with an idea. Ideas are all around us. What ultimately acquires an "innovation" label is hard to forecast and hard to identify during development, because progress from the idea is an erratic, accumulating clutter of additional ideas, discoveries, and inventions.⁹ As a goal in itself, innovation is too abstract, which tends to divert the focus to millennial techno-quakes such as cold fusion or the end of the aging process. This orientation mistakes the outcome for the idea and makes the first steps on the path hopelessly hard to imagine. Nonetheless, having criticized others for failing to show we have a future worth pursuing, I will attempt to stake our claim in a world of evolving innovation. One option for me is to venture a forecast. It would seem impossible to compete with Julian Johnson in that arena. In his AATS presidential address 49 years ago, he said, "...we as surgeons have hardly scratched the surface of the problem of coronary artery disease, and yet this is a problem which is far greater in scope than that of all other heart disease combined."¹⁰ Talk about a new race called Man! However, notice that Dr Johnson only presented the idea—"there is a place" called coronary artery disease. In his audience sat the actors responsible for his specialty's spectacular future in the treatment of coronary artery disease. I could as easily say what I believe to be true, that we are entering an imaging revolution, catalyzed by enormous increases in computing power, that in many instances will replace dependence on open inspection of the arrested heart with real-time visualization using computed tomography and magnetic resonance imaging. Combined with the ingenuity of robotic engineers, as 1 example, imaging might take us places we can hardly imagine. At a future annual meeting, I might be judged prescient for identifying some new race called imaging. My point, however, is not my prescience—exactly like 49 years ago, the reasons we can

exploit this opportunity sit somewhere in front of me. Innovation is driven by *people* who generate ideas. By *people* who are constitutionally incapable of focusing on tiny inflections along the asymptotic part of the technology curve, where quality becomes the primary, innovation-stifling objective. These are people, by the way, who often chafe under the yoke of what many call education. Specific forecasting matters little when you know where to look for these people. Find them, and you know where the next big idea will come from, even if you do not know what it is.

On these points, transcatheter aortic valve replacement is instructive. In the idea stage, and in early experimental development, it seemed a reckless fantasy for which the most common forecast was a 100% stroke rate. In a surprisingly short time, it has become available for commercial use for certain situations, and the forecast everyone wants to hear is how soon it will completely replace surgical aortic valve replacement. We missed the chance to learn from history, and again sat on the sidelines, driving surgical aortic valve replacement along its quality asymptote, mistaking mini-this and mini-that for innovation, while cardiologists had all the fun. We awoke from our slumber in time to form exciting new collaborative relationships with our cardiology colleagues, who began teaching interventional skills to a small cadre of cardiac surgeons. We have now proved that fully trained cardiac surgeons can learn, and practice, cardiac surgery and interventional cardiology, in all their flavors. As we mint more and more of these chimera, their creativity will take us in new and surprising directions, on both sides of the former cardiology/surgery divide. Where did these pioneering chimera come from, and where will their successors come from? They will come from this audience in front of me.

By this route, I return to my central thesis and relieve the anxiety of those who fear I have forgotten the title of my address. Is modeling excellence of value on our path to common goals based on higher principles? This simple slogan derives some of its power from the double meaning of the verb “model,” combining the obvious “to exemplify” with “to shape or mold,” as with clay, which evokes our technical craft, and the active part of instruction. The real key to this phrase, however, is the “We”—the we who presume—who have the audacity—to model excellence. Also, it is *we* who precede and surround *what* we do and thereby light our way forward past the mesmerizing, enormously gratifying things we do with our hands.

That is our trap. It is a trap I have struggled with for 30 years. There is great comfort and satisfaction to be found in the infinite perfectibility of technically challenging repetitive tasks. Added to that, our repetitive tasks have a compelling urgency and seriousness that makes them even more seductive. I remember vividly, as Chief Resident in 1984, standing in the operating room at 3 AM struggling with

a take-back for bleeding, and feeling suddenly blown back on the heels of my clogs by the sheer pleasure of it all—the responsibility, the uncertainty, the intensity of composure under fire that makes the thrill feel illicit. By what right can this be so much fun?

In the movie *Patton*, George C. Scott plays the enigmatic General. In a scene I have never been able to forget, Patton walks slowly, alone, through the smoking debris and human carnage of a battle just ended. He turns, gazes intently into the distance, and says aloud to himself: “I love it...God help me, I do love it so...I love it more than my life.” And, like Patton, because of the nature of the things we do, we are too easily intoxicated by the rapture of action. John Henry defined himself by what he did. He was “a steel-drivin’ man,” born with a hammer in his hand, who tried to compete with a steam hammer, and died with that hammer in his hand. We can avoid being memorialized in some future folk ballad about cut-and-sew guys who died venerating the heart–lung machine. Our way out of this trap depends on *who* we are, on the personal qualities that generate the ideas that start the cascade of discovery, invention, and innovation. What are those qualities?

We began with Yeats,¹ and now return to the smiling public man visiting school children.

What youthful mother, a shape upon her lap...
Would think her Son, did she but see that shape
With sixty or more winters on its head
A compensation for the pang of his birth
Or the uncertainty of his setting forth?

The poet-son is speaking and feels devalued by age. Nothing profound about that! We can also agree that few mothers would trade 60 years of a son’s life to avoid the pang of his birth. It is the “uncertainty of setting forth,” so obvious in school children, that is more interesting. Uncertainty speaks in many voices, ranging from “failure is possible” to “opportunities are unlimited.” My grandfather was a surgeon, who was at the very end of his career as I was starting medical school. He confided to my grandmother, “How I wish I could be starting over again!” At the time, I thought, how preposterous! Would he really take that risk? Suppose the same illustrious career did not unfold the second time around? Now, I realize it was the uncertainty of setting forth he missed, the boundless opportunity across all possible outcomes, good and bad. It must have seemed delicious at a time when loose ends were being tied up, and plots were approaching their resolutions, even if most were good and glorious.

The men and women who will carry our specialty and this Association forward after we have gone will be very similar to those who preceded them. Not because they will be performing the same procedures we perform, in the same way, but because they will have the same traits and share similar

values. They will not need to be engineers or biochemists or geneticists. They will be men and women for whom the multifaceted excitement of uncertainty is irresistible. They will be men and women who infinitely prefer haggling in a sweaty marketplace of unanswered questions to lounging in a temple of unquestioned answers. Combine that with restless curiosity, imagination, creativity, persistence, and risk-embracing boldness, and the development of revolutionizing treatments of disease in the thorax and blood vessels will come from us.

How can I conclude without resolving the 60-year-old smiling public man's dalliance among school children? The poem ends:

O chestnut-tree, great-rooted blossomer,
Are you the leaf, the blossom or the bole?
O body swayed to music, O brightening glance
How can we know the dancer from the dance?

This "how can we know" would appear to undermine my thesis that everything starts with *who* we are, not *what* we do. The paradox is the fusion of act and actor that occurs when the skill of the actor is sublime, and that fusion is the feeling we have when we are operating in the zone—but we know the difference—without the dancer, there is

no dance. So my charge to the young men and women hiding in the back, hiding on the sides, infiltrating here and there the central old gray matter of smiling public men—is to get up here, and keep us dancing!

Thanks again, to every one of you, for the honor of this occasion.

References

1. Yeats WB. Among school children. In: Finneran RJ, ed. *The collected works of W.B. Yeats, vol. 1: The poems*. New York: Scribner; 1997:219.
2. Desjardin TA. *Stand firm ye boys from Maine: The 20th Maine and the Gettysburg Campaign*. Gettysburg, Pa: Thomas Publications; 1995.
3. Shaara M. *The killer angels*. New York: Random House; 2004.
4. Association of American Medical Colleges. Data warehouse: Applicant matriculant file, table 17: MCAT scores and GPAs for applicants and matriculants to U.S. medical schools, 2000-2011. Available from: <http://aamc.org/download/161690/data/table17.pdf>. Accessed November 9, 2011.
5. National Resident Matching Program and Association of American Medical Colleges. Charting outcomes in the match: characteristics of applicants who matched to their preferred specialty in the 2011 main residency match, 4th ed, August 2011. Washington, DC: National Resident Matching Program; 2011.
6. Jurgalski E. All 8000ers—ascents and fatalities: June 19, 2008. Available from: <http://www.8000ers.com>. Accessed May 14, 2012.
7. Chua A. *Battle hymn of the tiger mother*. New York: Penguin Press; 2011.
8. Milton J. *Paradise lost*. Oxford: Oxford University Press; 2005.
9. Gertner J. *The idea factory: Bell Labs and the great age of American innovation*. New York: Penguin Press; 2012.
10. Johnson J. A surgeon and something more. *J Thorac Cardiovasc Surg*. 1963;46:141-9.