Covering all the bases in academic medicine

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Like all of my predecessors, I have spent a substantial amount of time during my year as President reviewing the addresses delivered by my extraordinarily distinguished predecessors and wondering how I could possibly say anything new, different, or in any way memorable. Like my more recent predecessors, my concerns about the quality of my Presidential Address were either compounded by, or perhaps attenuated by, the uncertainty as to whether anyone would come to our meeting to hear my remarks. The good news is that attendance at these meetings has stabilized, with this year's registrants at slightly over 500.

The flip side is that, in our attempt to keep the meeting compact, the timing of my address is most suitable for weekend insomniacs who are hoping for an entertaining warm-up for this morning's main event — the presentation of the Kober Medal to our distinguished winners, Mike Brown and Joe Goldstein, by Dan Foster and Gene Wilson. Is it my imagination or, since George W. became President, is everybody from Texas?

As I looked through the various addresses given both by AAP Presidents and by speakers at our annual dinner, I must admit that I ultimately found my favorite, a talk whose metaphorical relevance to academic medicine has stood the test of time. As a prelude to my own thoughts, which I hope will be equally metaphorical but less cynical, let me begin by presenting an abridged version of the remarks of Dr. Richard Johns several decades ago (1).

The title of Dr. Johns's address was "How to swim with sharks: the advanced course." Without ever specifically mentioning academic medicine, Dr. Johns emphasized that the world was dangerous, and that as one moved from the small backyard pond to trying to compete successfully in the larger ocean of academic medicine, one had to face a number of potential adversaries. At a time when these meetings revolved around the presentation of scientific abstracts, these competitive instincts were upregulated by a variety of chemokines that incited inflammatory responses against new data that challenged established dogma or questions that were designed to display the relative prowess of the questioner, potentially at the expense of the presenter. Oftentimes, these debates were the intellectual highlight of our meeting; sometimes, however, they degenerated into arguments as creaky as the protagonists' joints, proving the old adage that "in academic medicine the fights are so fierce because the stakes are so small."

In any case, back to Dr. Johns. His first piece of advice for his audience at the AAP meetings was that, when swimming, you should assume that all unidentified fish are sharks. Regardless of their initial appearance, unidentified fish not only cannot be considered friendly, but, in fact, must be considered predators until definitive evidence to the contrary is available.

Second, since sharks are stimulated and reinforced by the sight and smell of blood, when potentially faced with a shark, it is critical that you do not bleed. Although our detailed knowledge of the coagulation pathway has advanced over the past several decades, this basic principle remains intact. For those of you taking prophylactic aspirin, this warning is more pertinent than ever.

Third, although some would suggest that the "meek shall inherit the earth," when faced with a shark, it is critical to counter any aggression promptly. Think humeral immunity and hyperacute rejection, not delayed hypersensitivity, tolerance, or chimera formation.

The usual model for physicians is to rush to the aid of the injured. In the midst of a shark attack, however, Dr. Johns's advice was just the opposite: get out if someone is bleeding! For shark attacks, there is no effective active or passive immunity, so the medical response becomes simple: personal evacuation and quarantine.

The key principle of host defenses is to fight off foreign substances while not inciting an autoimmune response. The presence of high levels of immunoglobulins in the gut and respiratory tract are consistent with Dr. Johns's next admonition, which is that when faced with a shark, do not wait for an overt attack, but rather use anticipatory retaliation. This recommendation is consistent with the general principle that the primary prevention of disease is always preferable to having to treat the disease after it develops.

Fortunately, sharks are typically solitary predators, but, if one shark is dangerous, nothing could be worse than a bunch of sharks, especially if, contrary to their natural instincts, they act together. Therefore, when faced with the potential of multiple sharks, Dr. Johns warned that it is vital to disorganize an organized attack. In doing so, one may be able to fight off the sharks one at a time, whereas it would not be possible to defeat them all simultaneously.

If Dr. Johns captured, albeit cynically, some of the flavor, excitement, and relevance of this organization and of the Tri-Societies' meetings in which he participated, then the theme song or anthem of academic medicine would have been the musical score from the movie *Jaws*. But what now? I stand before you today as a different kind of president in at least two ways. One is that I am the only living, breathing president of the AAP who never went to a meeting in Atlantic City. Since I grew

up in southern New Jersey, I remember the boardwalk (for this organization, remembering the boardwalk is almost the moral equivalent of remembering the Alamo), but I remember it as a young child on vacation and not as someone who gawked at the giants of medicine as they watched the jumping horse and judged the horse flesh of the young presenters who displayed their wares as potential future faculty. It is, however, too soon to paraphrase John Kennedy and to claim that "the torch has been passed to a new generation," tempered by the battles of managed care, because several of my successors as presidents of the AAP do, in fact, recall their times at Atlantic City meetings.

A second reason that my views may be somewhat different is that I am the first AAP President in many years who never did wet laboratory research. Rather, as you all know, I am a clinical epidemiologist who has focused on studying patients who see physicians, especially those with common problems, such as acute chest pain or a need for noncardiac surgery, and then have performed randomized trials of interventions, studies of prognosis, and analyses of outcomes such as quality of life, cost, and cost-effectiveness. Of note is that although my research focus has not been in the mainstream of the last generation of this Society, it fits remarkably well with our historic roots. The center of gravity of the AAP has been investigations performed by full-time faculty in departments of medicine, using the latest methodologies across whatever spectrum of science can advance our understanding of normal human biology, the basic mechanisms of disease, how people react to these diseases at levels ranging from the subcellular response to the population-wide impact, and how best to alter the disease process in ways that benefit the individual and society. The American Society for Clinical Investigation was created for these same purposes and to extend honorary status to a younger generation of clinically-active investigators, the "young turks" who would hopefully aspire to subsequent membership in the AAP. It is important to emphasize that neither Society was envisioned as a society of molecular biology or of any particular scientific emphasis that may have preceded modern molecular biology. The breadth of excellence to be encouraged was very nicely epitomized by the requirements for the Kober medal, the AAP's highest honor, whose charter emphasizes that it is to be given to recognize "outstanding contributions in the medical sciences or preventive medicine."

Another memorable AAP address was delivered by my good friend Holly Smith, who was a predecessor as Chair of Medicine at UCSF, as Editor of the *Cecil Textbook of Medicine*, and as President of the AAP. Holly correctly forecasted that the rise of the subspecialty society meetings was a bad omen for the future of these meetings. With his unparalleled humor and prescient wisdom, Holly made it clear that tradition and nostalgia could not stand in the way of progress.

In the context of world events, the risks of bioterrorism, and the interface of medicine and public health with these events, as evidenced so beautifully by Dr. Henderson's remarks last night, the fate of the AAP and its sibling organization, the ASCI, hardly seems like a critical issue. Rather than talk nostalgically about the distinguished traditions of our organization, academic medicine, and departments of medicine, I thought I would try to borrow from the model of Dr. Johns and talk about something else that has indisputable metaphorical relevance. I therefore decided to talk about another topic that drips with nostalgia and reverence for the past: America's pastime, baseball.

This metaphor, though perhaps inane or ridiculous to some of you, has relevance to me, because growing up in Philadelphia, my dream was to become the general manager of the Philadelphia Phillies. In an era in which baseball players needed winter jobs in order to make ends meet, my father advised me, in part for financial reasons, to go into medicine instead. If only he was as prescient as Holly Smith! Then again, no matter what you think of me as an academic physician and chair of a department of medicine, if you have ever seen me play baseball, you would probably agree that, at least on this issue, there was no question but that father knows best.

But back to baseball. Let me describe to you some of the key aspects of baseball, including some of its traditions, some of its rules, and how to build a winning team.

Many baseball fans have looked back with great nostalgia to an earlier era when great stars made baseball America's pastime. In describing those better times, however, it is often overlooked that initially all of the players were white men. Subsequently, amid great fanfare, baseball was finally integrated by Jackie Robinson, and now the U.S. major leagues include a diverse group of players of different ethnic backgrounds such as Sammy Sosa from the Caribbean and Ichiro from Japan. In all endeavors, this policy of finding the best talent is always critical to success. More recently, women have assumed roles in administration and even as umpires, further testimony to the diversification of the sport. Despite these diversifications, however, baseball is frequently criticized, not inappropriately, for not having done enough to broaden its leadership.

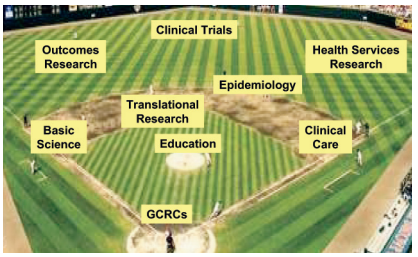

Figure 1
Positions in the field of academic departments.

In baseball, there is an annual draft in which the best young talent is ranked by the various teams, so that all the top prospects are matched with individual organizations. These young players then become part of a minor league farm system, in which they receive mentoring, instruction, and guidance, while playing before relatively small crowds. Only the best can expect to be promoted to the major leagues.

It was formerly common for players to play their entire careers with one team, but since Curt Flood became the first baseball free agent, the most talented players are the objects of bidding wars, so that free agents such as Alex Rodriguez may be enticed with unbelievable packages to join a new team. Free agency makes it hard to keep one's own best players, but also makes it possible for entrepreneurial and aggressive teams to accumulate substantial talent.

In baseball, players are listed both in the batting order and by their positions in the field. In the field, each position is important, yet very differ-

Figure 2
Where the heavy hitters publish. *Nature* cover (Volume 385, Number 6619, Copyright 1997) reproduced with permission from MacMillan Publishers Ltd.; *Science* cover (Volume 290, Number 5494, Copyright 2000) reproduced with permission from The American Association for the Advancement of Science; *The New England Journal of Medicine* cover (Volume 345, Number 14, Copyright 2001.) reproduced with permission from the Massachusetts Medical Society.

ent. Every team focuses on strength up the middle (pitcher, catcher, shortstop, second base, center field), with the general rule of thumb being that a team cannot succeed unless it is strong in these positions (Figure 1). Successful teams, however, also rely critically on power at the corners, first base and third base, where it may be less important to have all-around players and more important to have individuals who have particular power and skill at their respective positions.

In little league, being positioned in the outfield, especially right field or left field, implies a relative lack of skill. Hence the common aphorism "out in left field." By the time one gets to the major leagues, however, being out in left field does not imply second-rate status, but rather it is a position that has been played by some of the best baseball players of all time, such as Ted Williams and, most recently, Barry Bonds, who are just two of the best-known left fielders. So, at the major league level, even outfielders play critical roles on a well-rounded team.

Figure 3
Three members of the Association of American Physicians who are also Nobel laureates.

In baseball, it was often said that singles hitters such as Ty Cobb drive Chevrolets because no one pays much to come see them, while home run hitters such as Mark McGwire, often called heavy hitters, drive Cadillacs because they draw the fans and fill up the park. Everyone wants to be Babe Ruth and hit a home run, and each hopes to hit a home run each time he is up to bat . All baseball fans are familiar with those who have been well publicized for holding season records for home runs, such as Ruth, Maris, McGwire, and Bonds, and we all know that home run hitters get lots of good press in leading publications (Figure 2). For those who hold career home run records, such as Ruth, Hank Aaron, and Sadaharu Oh, the recognition transcends their own league or even country to reach international stature (Figure 3).

All baseball players hope that their career accomplishments may result in their election to the Cooperstown Baseball Hall of Fame, but honors such as this are reserved for the very best as judged by experts (Figure 4). Of note is that the Hall of Fame recognizes outstanding contributions by players at different positions in different eras. What is usually expected is superb performance over an entire career, but the Hall of Fame may also recognize brilliance over a shorter period of time. The recent emphasis on relief pitchers led to the creation of a new statistic, the save, and to the creation of new awards to recognize this new breed of player.

Most baseball players play only one position after they reach the majors, but some change positions as their careers progress. For example, Babe Ruth started as a pitcher and became a right fielder, and Pete Rose started as a second baseman and later played a number of other positions. Baseball general managers must be careful not to pigeonhole their players prematurely, but rather to allow them the opportunity to evolve their careers over time.

To afford to recruit new free agents and to keep their own best players, baseball teams must fill up their stadiums by selling tickets, they must hope that the fans buy a lot of concessions, and, ideally, they try to sell their broadcasting rights at top dollar. The importance of revenue sources from playing the game on a daily basis (Figure 5), from satisfying happy customers (Figure 6), and from major outside sources (Figure 7) is critical for generating the resources needed to build a winning team.

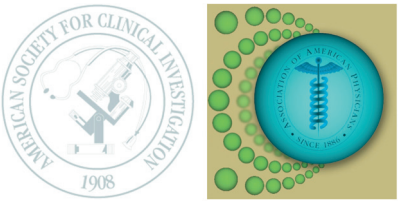

Figure 4
Academic Medicine's Halls of Fame.

And every fan wants a winning team, especially a team that will win the World Series. Although there is always debate and subjective argument regarding which is or was the best team (Figure 8), there also are objective measures and statistics that help settle these debates. Of course, individual success is also important in baseball, whether one is a pitcher, for whom the Cy Young award is the highest honor, or a position player, for whom the most valuable player award is most coveted. Baseball clearly understands the importance of recognizing outstanding performance multiple domains (Figure 9 and Table 1).

Baseball is a good metaphor for academic medicine and departments of medicine because baseball requires strong individual performances as well as some degree of teamwork. Only one person pitches, bats, catches, or throws at a time, but the team also benefits from relays and coordination. In baseball, the number of individual statistics that are tracked is almost endless, and the individual rewards substantial; nev-

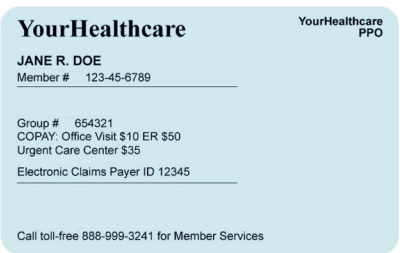

Figure 5
Even in academia, substantial revenue is generated from the daily practice of medicine. Much of this revenue supports the academic mission.

Table 1
Recent Kober Award Recipients of the AAP

1992	E. Donnall Thomas
1993	Arnold S. Relman
1994	David M. Kipnis
1995	Alexander Leaf
1996	Robert G. Petersdorf
1997	Helen M. Ranney
1998	Eugene Braunwald
1999	Jean D. Wilson
2000	J. Claude Bennett
2001	Kurt J. Isselbacher
2002	Michael S. Brown/ Joseph L. Goldstein

ertheless, every player wants to be on a winning team. Sacrifice bunts and sacrifice flys are rewarded, and some will sacrifice personal goals or rewards to be on a World Series championship team

In any address, it is always difficult to find the right balance among various themes: acting as a cheerleader for the organization one loves, blaming unenlightened outsiders for any unrealized aspirations, or introspective self-reflection. The latter, of course, runs the risk of creating controversy, generating disagreements among friends, even swimming with sharks.

As demonstrated in our bench-to-bedside talks yesterday, one research paradigm that currently characterizes this society could be depicted symbolically as finding candidate genes from severely affected individuals or families, cloning the gene, breeding a transgenic mouse to confirm the relationship between the genotype and the phenotype, and correcting the problem by giving the protein (or inserting a gene to produce it), or by suppressing an excess protein, or by blocking its effect. This is a wonderful model, and we saw examples yesterday of how it has already made a difference in some diseases and holds great promise for the future.

Figure 6
Happy customers fuel medical philanthropy. Photo reproduced with permission from http://www.dmc.org/donor/donation.html.

But let me now describe a somewhat different paradigm, which begins by understanding one of the great triumphs of modern medicine, which is the marked decline in mortality from stroke and coronary heart disease in the past 50 years or so (2). Mortality from stroke has declined consistently and dramatically, by about 60%, since 1950. For coronary heart disease, there was an increase until the mid 1960s, followed by an equally steep decline. Of note is that noncardiovascular mortality has declined, but much less impressively over the past 50 years.

What are the reasons for this decline in coronary mortality? In analyses performed by us and others (Table 2), about a third of the decline can be attributed directly to reductions in serum cholesterol levels, reductions partly due to drugs, especially statins, which derive directly from the extraordinary research of today's Kober medalists (3). But most of the national reductions in cholesterol levels that explain the decline since 1965 antedated the widespread use of these drugs and can be attributed most directly to dietary changes that were very modest on an individual basis, but have a profound effect when multiplied by 250 million Americans. Reductions in smoking and blood pressure have also been important, with risk factor reductions accounting for about 50% of the decline in coronary mortality. Improvements in the case fatality rate after acute myocardial infarction (MI) and in the medical and surgical treatment of chronic coronary disease account for about 40% of the decline.

To make my point, consider mortality from acute MI. Over just the past 20 years, mortality rates after acute MI have fallen by more than 75% in persons under age 65, by about 50% between ages 65–84, and by a more modest 7% in patients over age 85 (4).

For acute MI, an amazing range of potential interventions have been subjected to large-scale randomized control trials. For example, in these randomized trials, aspirin is associated with about 0.8 odds ratio for death, meaning that it reduces the odds of death by about 20% (5). In the acute setting, beta blockers are also associated with a favorable odds ratio, although the pooled trials yield a confidence interval that overlaps 1.0. For thrombolytics and especially primary

Figure 7
The NIH is a key outside source of revenue for academic departments.

PTCA, the benefits are clear. For ACE-inhibitors, the benefits are modest but significant in the acute setting, and, of course, we know that they are much more beneficial chronically after the MI, as are beta blockers. Calcium channel antagonists have an adverse effect and should not be used routinely. Anticoagulants appear to be marginally beneficial, principally when used with thrombolytics or primary PTCA. Lidocaine, which was shown in a number of randomized trials to reduce the risk of primary ventricular fibrillation, actually appears to increase the risk of death. Magnesium was beneficial in a number of small trials but showed no benefit and even some harm in the largest trials. Nitrates may be marginally beneficial. The data on secondary PTCA and coronary bypass graft surgery are suggestive in the acute setting, but the odds ratios for all the pooled data continue to overlap one.

As a result of these data, the use of therapies for acute MI has changed dramatically over the past several decades. Aspirin use has increased sub-

Figure 8
The rankings of medical schools generate substantial debate and fan interest. *Best Graduate Schools* cover (1st edition, Copyright 2002) reproduced with permission from *U.S. News and World Report*.

stantially, as has the use of beta blockers, thrombolytics, ACE-inhibitors, and even, more recently, primary PTCA (5). By comparison, the use of calcium antagonists increased until the randomized trial data appeared, and then the use rates subsequently decreased. Similarly, the use of lidocaine increased when it was thought to be beneficial for primary ventricular fibrillation but decreased substantially when its detrimental effects became obvious. For urgent coronary bypass graft surgery and nonprimary PTCA, there has been a modest increase, again consistent with the data.

We can also estimate how these changes in therapies have contributed to the reduction in 30-day mortality from acute myocardial infarction between 1975 and 1995 (5). Aspirin, in many ways the lowest technology intervention, is estimated to be responsible for 30% of the decline in mortality from acute myocardial infarction. The increased use of thrombolysis, heparin, primary PTCA, beta blockers, and ACE-inhibitors has also contributed. Reductions in the use of lidocaine have been beneficial, as have the increased use of other PTCA, nitrates, and coronary artery bypass graft surgery. Overall, there is an impressive linkage among data from randomized trials, changes in the use of therapies as a result of these trials, and reductions in mortality.

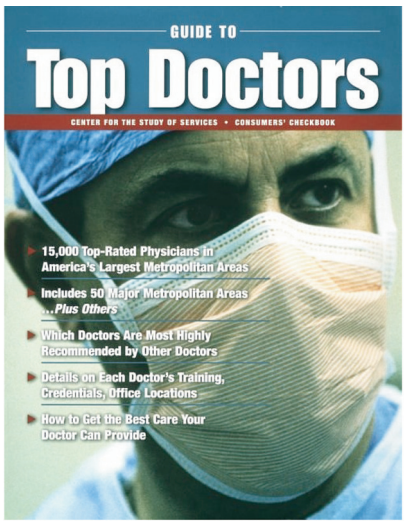

Figure 9
Top doctors. Recognizing excellence in the clinical domain. *Guide to Top Doctors* cover (1st edition, Copyright 2000) reproduced with permission from The Center for the Study of Services.

Table 2
Explaining the decline in CHD mortality: 1980-1990

	Primary prevention	Secondary prevention	Total
Cholesterol lowering	15%	17%	32%
Smoking reductions	3%	3%	6%
Blood pressure reductions	6%	7%	13%
Total risk factor	**24%**	**27%**	**51%**
MI case-fatality rate	-	14%	14%
Medical/ surgical treatment		27%	27%
Total	**24%**	**68%**	**92%**

CHD, coronary heart disease. MI, myocardial infarction. Adapted from reference 3 with permission.

In fact, evidence-based advances in cardiac care have had an extraordinary effect on medical practice and outcomes (Table 3). Here are just two examples of changes in therapies from the time that I was a cardiology fellow in the 1970s to the current time. For ST-elevation acute MI, the approach in the 1970s was prophylactic lidocaine, bed rest, and perhaps warfarin for anticoagulation. In 2002, standard therapy includes thrombolysis or primary PTCA for recanalization, aspirin in essentially everyone, and beta blockers and ACE-inhibitors in those who are eligible for them. The benefits of these changes are substantial. But also consider congestive heart failure. In the 1970s, the cornerstones of therapy were diuretics, digoxin, and bed rest. The newly available beta blockers were to be avoided. By 2002, diuretics remain a key therapeutic option, but it is ACE-inhibitors, beta blockers, and spironolactone that have been shown to improve survival. Digoxin is a second-line therapy that reduces hospitalizations but does not reduce mortality. Bed rest has been replaced by exercise rehabilitation programs.

Without in any way denigrating the paradigm of cloning genes and developing transgenic mice, please consider how these reductions in coronary mortality have been achieved. First, virtually every improvement began with epidemiologic and clinical epidemiologic research that identified the key risk factors (Table 4). Interventions were developed to reduce these risk factors. Some of these interventions were derived from basic science research, but others, such as smoking cessation, came from the behavioral sciences literature and then were supplemented by physiologic interventions, such as nicotine replacement therapy. In cardiology, virtually every intervention has been tested in large-scale randomized clinical trials, which resulted in the abandonment of many widely accepted therapies and the adoption of therapies previously thought to be contraindicated. Once therapies were shown to be effective, their implementation depended on whether they were also cost effective before making changes in the delivery system (such as re-engineering hospitals to provide primary angioplasty). It was important to develop guidelines and protocols, to help physicians and hospitals implement these strategies, to develop mechanisms for monitoring physicians' performances and helping them improve them (such as by computerized order entry), to determine why patients and physicians may not be compliant with effective recommendations, and finally, to be sure that these interventions have actually had the impact on morbidity and mortality in the real world that they were projected to have based on clinical trials. Of course, this paradigm does not replace the genetic paradigm I described earlier; in fact, the two are complementary, with the hope that beneficial therapies will be targeted to

Table 3
Evidence-based advances in cardiac care

	1970s	2002
ST-elevation MI	lidocaine	thrombolysis
	bed rest	primary PTCA
	? warfarin	aspirin
	β-blockers	ACE inhibitors
CHF	diuretics	diuretics
	digoxin	ACE inhibitors
	bed rest	β-blockers
	avoid β-blockers	spironolactone

MI, myocardial infarction; PTCA, transluminal coronary angioplasty.

Table 4
Methods underlying advances in modern cardiac care

Epidemiology	Identify risk factors
Develop interventions	Basic science
	Behavioral science
	Physiologic research
Test interventions	Randomized trials
Implement interventions	Cost-effectiveness
Re-engineering	Guidelines, protocols
Assess real-life impact	Compliance

individuals with appropriate genetic profiles and avoided in those who will not benefit or may even develop adverse effects.

My point is that in departments of medicine and other clinical departments, we must value and reward physicians whose science is applied at each of the steps of each of these, and other, paradigms for scientific medical advancement. A senior leader in academic medicine once said to me that clinical trials were not really science; all they required was a bunch of trained nurses. I obviously disagree and will turn once again to my baseball diamond. We must never forget that our departments' efforts in education, clinical as well as scientific, represent our unifying mission, just as pitching is said to be 70% of baseball. For a department to succeed, we need outstanding individuals, hopefully all-stars, in each of these positions. Not every department will be able to be strong in every position, especially if one tries to have this type of breadth within every division or subspecialty. Some individual success and even team success can be achieved despite weaknesses in some of these positions. The best departments, however, will cover all the bases and be strong in the outfield as well. Our departments should not be purely clinical, but it also is not, in my opinion, desirable to aspire to have a department that is so focused on basic science that it is tilted out of proportion toward third base. Academic medicine, like baseball, is played by individuals who strive for individual success, but the entire team benefits from multidisciplinary research, coordination between clinicians and researchers, and the commitment of everyone toward training and education.

I must emphasize in the strongest possible terms my belief that both the ASCI and the AAP must continue to expand their horizons about the type of scientific contributions that warrant election into our halls of fame. In my nine years on the AAP Council, I believe that my colleagues have lived up to the symbolic commitment they made when, under Gene Wilson's presidency, someone with my background was invited to the Council to broaden the perspective of the membership debate. I am confident that Ralph Horwitz, who is an extraordinary researcher and leader, will continue and build upon this diversification effort. The AAP continues to see an outstanding group of nominees, and I believe a substantial reservoir of wonderful future members remains. Therefore, we can be confident about a consistent stream of worthy members for the near future.

However, I would be remiss if I did not share with you my dismay about the election policies of the ASCI. Whereas the AAP has elected its maximum number of members even in years in which the nomination numbers were comparatively low by historical standards, the ASCI has recently failed to fill its full complement of potential new members year after year. Although the ASCI has elected an occasional nominee with absolutely superlative credentials in clinical epidemiology and clinical research, I believe it has adopted an election policy that no longer follows the basic "center of gravity" approach of focusing on finding the best investigators of all types, primarily in departments of medicine but extended when appropriate to other clinically active physicians, up to the full complement of electees allowed by the bylaws. Although it is true that there may be fewer physician scientists performing some types of research than in prior years or generations, there are plenty of physicians who are performing clinical investigation. My honest concern is that the ASCI is on an apoptotic course, in which its election policies have not subtly discouraged nominations across a broad spectrum of clinical investigation and made the organization increasingly irrelevant to the departments of medicine that have served as the core for both the ASCI and the AAP. I urge my colleagues on the ASCI Council immediately to adopt a radical change in their selection process: to encourage applications explicitly rather than to discourage them implicitly; to elect the full complement of members allowable by the bylaws each year; and to diversify the membership to cover this full spectrum of research performed in departments of medicine. Without this change in ASCI election policies, these meetings are surely doomed. The AAP will find it increasingly difficult as well, and these societies will become irrelevant in clinical departments of medicine, even those that are research intensive. To my friends in the ASCI leadership, I apologize for the bluntness of these remarks, but they are no different in substance from what I have shared with many of you privately.

The Baseball Hall of Fame includes outfielders who have hit more than 700 home runs and shortstops who have hit fewer than 20. It includes players whose lifetime career statistics demonstrate their aggregate accomplishments as well as stars with briefer careers that were nevertheless noteworthy for their substantial impact. In short, it looks at achievement in the broadest sense and in the context of both the position that someone played and the era in which that person played. And it always remembers it is the Baseball Hall of Fame, not the third baseman's hall of fame, the hitter's hall of fame, or the strikeout artist's hall of fame.

Why have I spent so much time talking about departments of medicine at a scientific meeting? My belief is that the future of our honorary societies is critically dependent on whether or not we can find a way to reposition our meetings as a cornerstone of academic medicine. In the past several years, these meetings have reached a new metastable state, with attendance hovering around 500. The attendees are primarily the new members, the people who nominated them, the officers of our societies, our invited speakers, and a loyal but increasingly aging base of members dedicated to science in medicine. Of course, there are some honorary societies whose meetings are perpetuated by this model. However, in the Atlantic City era, these societies and the AFCR represented the core of academic internal medicine. That core has shifted, undoubtedly because of the broad spectrum of research that I

have described. The meetings also always have had some smaller numbers of pediatricians, neurologists, dermatologists, and physician scientists from other departments, but they were coming because their interests and outlook were oftentimes more synchronous with departments of medicine than with their own departments.

My hope is that we can test the waters again by beginning to develop links to societies that focus on patient-oriented research, and perhaps outcomes research as well. Just as it is often said that it takes as long to get better from asthma or heart failure as it took to get worse, it will likely take us at least as long to reformulate our meeting as it took for the meeting to involute. And some people never get better from heart failure. Nevertheless, I urge my successors on the councils of both of these organizations to look outward, not inward, to think about the broader definitions of science in clinical departments, and especially departments of medicine, and to be increasingly inclusive not only in our membership, but also in the way our meeting is structured and our allies are defined.

I also realize that, as a clinical epidemiologist, I have, in many ways, been on the lunatic fringes of both of these societies. Lunatics or radicals rarely change society; they just soften it up until the establishment begins to change. It took Nixon to go to China, and it may take a molecular biologist to change these societies in the direction that I am describing. I urge all of you to give serious consideration to where we are going and where we want to go.

Anyone who says anything that challenges the primacy and centrality of basic science in departments of medicine runs the risk of being labeled an "anti-scientist." Although the department of medicine that I chair has more dollars of NIH grant research than any other department in the country, I obviously am not a laboratory scientist. So, let me make it clear that I value and embrace basic science research in departments of medicine. We encourage it; we nurture it; we emphasize it. But I hope we will also always encourage, emphasize, and nurture the full spectrum of activities that cover the entire playing field of academic medicine.

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