was so honored by Dr Organ’s invitation to write this article that I immediately accepted. Then, as I considered this subject—changes in the role of an academic surgical chair—
I realized the difficulty I faced. Certainly, any such assessment by me alone is biased by my personal experience and particularly by my incomplete understanding of the roles of an academic surgical chair in the past. Nevertheless, as my wife, Shannon, would be quick to point out, incomplete knowledge of a subject has never stopped me from expounding about it.

To gain perspective about the roles and responsibilities of a surgical chair between 20 and 30 years ago, I sought and received generous insights from James C. Thompson, MD, who served as chair at the University of Texas Medical Branch Department of Surgery from 1970 through 1994. Even with his valuable input and somewhat broader perspective, our experiences in 2 very different academic settings do not necessarily reflect the experiences of other surgical department chairs across the country. In my observations on national trends, I have tried to factor in their broader experiences as well. I have also had valuable input on this topic from my Vanderbilt colleague Naji N. Abumrad, MD, who has served as department chair for 2 institutions in New York. I have considered the changes that have occurred in the role of the department chair during the tenure of my 3 predecessors at the Vanderbilt University Medical Center: H. William Scott, Jr, MD (1952-1982); John L. Sawyers, MD (1982-1993); and James A. O’Neill, Jr, MD (1995-2001).

The University of Texas Medical Branch in Galveston is where I attended medical school and general surgery residency during the period when Dr Thompson was chair. The University of Texas Medical Branch provides care to a predominantly indigent population from across Texas. In contrast, the Vanderbilt University Medical Center represents the Vanderbilt University Hospital and Clinic as well as the Vanderbilt University School of Medicine and Nursing School. The Vanderbilt University Hospital treats mostly insured patients, including those on Medicare. Patients covered by Medicaid, or the Tennessee version of Medicaid called TennCare, account for approximately 25% of the clinical volume at Vanderbilt, and self-payers (patients with no insurance) account for approximately 4% to 6%. Vanderbilt has an affiliation with the Nashville Veterans Administration Hospital, which is on the same campus. In contrast to what I experienced as a medical student, resident, and junior faculty member at the University of Texas Medical Branch, the Vanderbilt practice is mostly referral based and therefore clinically more similar to a private practice.

GOLDEN YEARS?

Were the 1970s and 1980s the “golden years” of academic surgery? In many ways, I think the answer to this question is a resounding “yes.” That does not mean that the best days of academic surgery are behind us; however, today’s surgical department chair faces numerous challenges that our predecessors did not encounter. The 1970s and 1980s saw relatively high rates of reimbursement for clinical work as compared with those of today. At the same
time, few questions regarding the cost of clinical care were asked by third-party payers, government, or employers. There was less oversight on many different levels. During that time, it was the common practice to admit patients a day or longer before a scheduled operation, and it was common for the patients to remain in the hospital for prolonged periods of time, even after relatively simple operations. Clearly, the system was much less efficient than it is in today's clinical practice. In addition, although medical malpractice lawsuits were not rare, the level of potential liability at that time was significantly lower than it is in today's practice. Consequently, medical malpractice insurance coverage was more affordable compared with now.

Looking back, the 1970s and 1980s seem also to have been the golden era of research for the academic surgeon. For example, in 1970, 40% of grants submitted by physicians were funded as compared with fewer than 20% of all submitted grants that are currently funded. The pay line this year might be below the 15th percentile. In addition, the level of sophistication of research in the 1970s was such that surgeons were ideally suited to conduct much of the whole-animal physiology investigation that was relevant and popular at the time.

THE CHANGING LANDSCAPE PRESENTS NEW CHALLENGES

The environment has changed markedly over the past 30 years in medicine in general and specifically in academic surgery. This changing landscape has presented significant new challenges to surgical department chairs, and the challenges fall into several major categories. The financial category includes changes in third-party payment systems, managed care, and decreasing Medicare and Medicaid reimbursements. At the same time, the regulatory burden is increasing along with requirements for documentation, more stringent labor protection laws, changes in the status of residents either as employees or students, the Health Insurance Portability and Accountability Act, and increasing outcome-reporting requirements. In addition, market forces have significantly altered the health care landscape with the rise and prevalence of for-profit hospital and provider networks and boutique hospitals and overall increasing competitiveness between academic medical centers and private nonteaching medical centers. Today's surgical chair must master an ever-expanding business vocabulary. Benchmarking is the key term of the day, whether in financial performance, compensation models, length of stay, case mix index, or clinical outcomes.

Significant changes have occurred in the demographics of medical students, residents, faculty, and patients. Over the past 30 years, remarkable changes in the epidemiology of disease as well as disease management have substantially affected the practice of surgery, particularly academic surgery. The drive for subspecialization has increased partly in response to some of these factors. In addition, the surgical department chair of today must deal with an explosion of advances in technology, particularly in biotechnology and biomedical engineer-

THE BUSINESS OF MEDICINE

The 1980s and 1990s brought about radical changes in the financial landscape for physicians and hospitals. As the costs of health care became an increasingly significant portion of the national gross domestic product, it was recognized that something must be done to control them. This recognition resulted in dramatic changes in reimbursement from Medicare, with the implementation of fixed payments for diagnosis related groups, implementation of the resource-based relative value scale system, and the progressive decreases in physician payments, combined with increasing documentation and oversight requirements for physicians. These federal changes were quickly followed by drastic changes among commercial insurers, who began to experiment with health maintenance organizations with capitated care and primary care gatekeepers; preferred provider organizations with deeply discounted fees for services, usually based on a Medicare benchmark; and other permutations, all of which were aimed at decreasing the amount of money expended on health care. Although these changes have decreased reimbursement to physicians, particularly surgical specialists, they have clearly failed to control health care costs.

One of the major functions of today's surgical department chair is to learn to manage the costs of doing business. This means learning how to manage the cost of providing surgical care while maintaining quality and enabling the development or integration of promising, but potentially expensive, new technology. On the cost side of the equation, the surgical chair has to be innovative in managing the costs of delivering long-term acute care and subacute care. In today's environment of diagnosis related group-based compensation and bed shortages (at least in our hospital), using methods to free up acute care beds is highly desirable. Examples of such innovations are developing chronic ventilator units or intensive care units.
provide appropriate input to the administrative leadership team of the institution. The chair of the Section of Surgical Sciences (equivalent to traditional departments of surgery elsewhere) and surgeon-in-chief at Vanderbilt has direct input and responsibilities for a portion of the overall business enterprise that generates approximately $200 million in annual revenues. Despite the declining reimbursement for clinical care, clinical revenues provide the major portion of the margin required to fulfill our missions of research, education, and clinical care. A review of the service-specific data demonstrates that the surgical specialties provide a major portion of the institution's positive margin. From data such as these, along with sophisticated marketing data, the clinical department chairs and the administration form strategic plans that lead to investment and growth for specific services. At Vanderbilt University, this strategic plan incorporates and complements the academic and research strategic plans, which are also produced by the department chairs and the administration. In many institutions, this level of coordination seems to be lacking; consequently, the competing needs of the hospital and medical school are often not well managed. This problem can lead to the conquest of academic medicine by business.

Currently, one of the most visible manifestations of the conquest of medicine by business is the displacement of or threat to surgical chairs by entrepreneurial clinicians. Their success in bringing in clinical income has fed their ambitions to the point that they confront whoever is actually running the academic institution (dean, chancellor, chief financial officer, or chief executive officer) with the desperate choice of replacing the sitting chair with the entrepreneurial clinician (the "rainmaker" in business parlance) or seeing that person leave the institution, taking a lucrative practice. In former times, when all decisions were hostage to the "holy" bottom line, the academic boss might simply have called the bluff and shown the entrepreneurial clinician the door. Doing so now in some institutions, especially those cursed with empty beds, might put the administrator in jeopardy.

Given the rate of change in many medical specialty fields, this reactive approach is a precarious one and might backfire because of an imbalance in programmatic support. For example, a hospital that has invested too heavily in adult cardiac surgery, particularly ischemic heart disease, to the exclusion of a more diversified and in-depth portfolio of surgical services might be particularly vulnerable to new market forces. Coronary artery stents are replacing many coronary revascularization procedures and are dramatically decreasing the case volumes for cardiac surgeons and hospitals across the country.

"CROSSING THE QUALITY CHASM" AND THE SURGICAL CHAIR'S ROLE

Although much of the focus in the late 1980s and first half of the 1990s related to the drive to reduce costs, value has been a predominant theme for the past decade. The major challenge for the chair is to adopt an overall cost-quality framework within which to work. Focusing on costs alone can jeopardize quality and focusing on quality alone can result in prohibitive costs. Assessing value in medicine requires a combination of clinical efficacy with cost-effectiveness. The awakening of consumerism in medicine is signaled by an increasingly sophisticated patient population and employers and payer groups who are all seeking the best value in terms of quality care at a competitive price. Add to this mix the realization of significant quality and safety problems in medical care, in part based on highly publicized reports from the Institute of Medicine: "To Err Is Human: Building a Safer Health System" and "Crossing the Quality Chasm: A New Health System for the 21st Century." Patient care advocates want to increase the delivery of evidence-based care to patients. Multiple ongoing quality initiatives in this country influence the function of the surgical chair. Examples of these initiatives are those pushing new quality reporting requirements as sponsored by the Joint Commission for the Accreditation on Healthcare Organizations and the promotion of minimum scale key services, more accurate prescribing, and so on as sponsored by the Leapfrog Group.

Unfortunately, relatively little of what we do surgically is based on the highest quality of evidence. The surgical department chair must now serve in the role of quality czar and provide more diligent oversight of surgical outcomes. The chair must also be a champion of evidence-based surgical care. The infrastructure to provide effective oversight is lacking in most medical centers. Fortunately, the American College of Surgeons is leading an effort to assist with the development of critical infrastructure through the Office of Evidence-Based Surgery, currently under the direction of R. Scott Jones, MD. Although these trends create new challenges for all of us, they also provide terrific research opportunities for the current and future generations of academic surgeons.

SURGICAL WORK FORCE: WHERE ARE WE HEADED?

In a recent American Surgical Association report on surgical education, Brennan and Debas noted that there is likely to be a significant shortage in all types of physicians by 2020, with the shortage projected at around 200,000. The worst shortages are expected to be in the surgical specialties, including general surgery, orthopedic surgery, neurosurgery, and urology. They noted significant trends in specialty career choices among medical school graduates with 10% selecting general surgery in 1996 as compared with 8% selecting general surgery in 2002. Clearly, the number of graduating medical students selecting general surgery as a career choice has declined some in recent years, resulting in more unfilled categorical positions, particularly in 2001 and 2002. The demographic trends of medical school graduates are undoubtedly having an impact on those students selecting general surgery as a career. Today's surgical department chairs must understand and deal with these changing demographics. In 1979-1980, only 23.1% of US medical school graduates were women, as compared with 45.3% for the 2002-2003 academic year. In addition, in 1979-1980, 85% of US medical school graduates were white, as compared with 65% in 2002-2003. The major
increase between those 2 periods was in graduates of Asian origin, with an increase from 3% to 21%. The number of African American graduates increased from 5% to 7%, and the number of Hispanic graduates increased from 3% to 6% over the same interval.

Numerous factors influence a residency choice, and many of them work against surgery as a viable career choice for medical school graduates. These factors include a desire for a more flexible lifestyle. In addition, residents and medical students often marry each other, creating more challenges in fulfilling their family responsibilities and expectations.

Certainly, the sex and ethnicity of medical school graduates are factors that significantly influence the number of graduates who select surgery as a career. Historically, relatively few women have opted for academic surgical careers. The same applies for underrepresented minorities, which are represented even less in academic surgical positions of leadership. Women and minorities still have too few mentors and role models in academic surgery. Although this pattern is changing, it will take many years to develop diversity in both sex and ethnicity to the point that academic surgery and surgical leadership reflect the medical school population and the US population. Today’s surgical department chair must understand these changing demographics and work diligently to promote the development of a diverse academic surgery faculty.

The prolonged surgical residency often works against the recruitment of women into surgical specialties. The duration of residency and its intensity often preclude childbearing during potential childbearing years. Modifications of the maternity-leave policies of residency programs as well as more flexibility at the American Board of Surgery could potentially address this issue and enhance the attractiveness of general surgery residency for women.

Surgical training tends to be prolonged and the pay is relatively low, with little increase over the past 25 years when adjusted for inflation. Because reimbursement rates for surgical procedures are ratcheting down, there is also a decline in the anticipated financial reward after training for many surgical specialists. Declining reimbursement and increasing overhead can create a disincentive to choosing a career in surgery.

Indebtedness of medical students is a significant factor that works against selecting a surgical subspecialty and, in particular, choosing an academic career. The cost of attending medical school over the past 30 years has increased 250% in public school and 400% in private schools. The average debt of the medical school graduate in 2003 was $109,457, and more than 25% of graduates had debt greater than $150,000. High debt might significantly limit choices of specialty or type of postresidency job. In other words, it is less likely for a resident with a high debt burden to undertake a period of research training that might further prolong the residency program. Furthermore, it is less likely that such an individual would take an academic junior faculty position with its relatively low level of compensation as compared with some private-practice positions. We need to develop creative methods of reducing this debt burden.

A form of debt repayment that is similar to the National Institutes of Health loan-repayment program could help reverse the trend for surgical specialty programs that are expected to be underrepresented in the future.

In addition, we need to determine whether there is a rational method to shorten surgical training. Recently, the American Board of Surgery and the American Board of Thoracic Surgery have agreed to establish joint training programs with a combined 7 years of clinical training that allows eligibility for both boards. Early specialization programs are under discussion or have been developed in vascular surgery, pediatric surgery, and plastic surgery. Numerous unknown factors lengthen training. For example, what will be the effect of the 80-hour workweek on the length of training? It will take several years of data to determine whether the quality of surgical residency graduates changes after 5 years of training under restrictive workhour regulations. Will there be a push toward more subspecialization? An example comes from the discussions among trauma and critical care surgeons to add emergency general surgery and combine them for a new certificate of added qualifications. Such a certificate would create a surgical hospitalist model that has appeared in internal medicine already.

Should we alter the sequence of clinical and research training for those individuals interested in research? Currently, research training during residency is often inserted during the middle years of residency, and this period extends the length of the general surgery residency. This research experience is often a requirement for the resident to be competitive for fellowship training in surgical subspecialties.

However, most residents who spend time in the laboratory do not continue the research after completing fellowship training. We could potentially save valuable resources and training time if we did not require residents to spend time in the laboratory as a ticket to be punched toward a surgical fellowship. We could then focus our research training efforts on those residents and junior faculty who truly want research careers. An alternative is to shift the research training years to the end of the residency program. In this regard, research training can be a postgraduate effort that can be combined with appropriate mentorship to generate the academic clinician-scientists of the future. These clinician-scientists could conceivably be trained as future translational researchers, an effort that would be consistent with the National Institutes of Health Roadmap goals.

Both technology and payer-driven changes in reimbursement have changed surgical practice, medical education, and resident training. For example, prior to the changes in the late 1980s and early 1990s, we routinely admitted most patients before their operations, sometimes days before. Residents and students had plenty of time to learn about the patient histories and present these patients to their attending surgeons. Today, almost all elective patients are either admitted on the same day as surgery or operated on as outpatients. Half of the 34,000 cases that will be handled this year at Vanderbilt University Medical Center are outpatient cases. Outpatient cases probably accounted for less than 5% of operations when surgeons of my generation trained.
Technology has dramatically changed our field. Peptic ulcer operations were among the more common when I was a resident and even more common before I was a resident. Now, we rarely perform an elective ulcer operation. Laparoscopic surgery was introduced in the late 1980s and early 1990s, dramatically changing surgical practice and resident training. These and other changes in the ways we manage surgical patients have created significant challenges to our ability to educate and train our medical students and residents. The increased pressures to maintain efficiency in the operating room coupled with the need to improve patient safety has led surgical programs and medical schools to invest heavily in an infrastructure that can provide basic (and sometimes advanced) surgical training outside of the operating room.

Today’s surgical chair must understand how all of these trends in medical school demographics and changes in disease management impact surgical education and training and the surgical workforce. Managing a residency program has become a full-time effort because of these factors and the increasing regulatory and documentation requirements related to training. For these reasons, most current department chairs have delegated the residency program director role to another senior faculty member.

**WHAT ROLES AND TRAITS FOR THE SURGICAL CHAIR HAVE NOT CHANGED?**

The surgical department chair in the 1970s and 1980s had numerous roles, responsibilities, and traits in common with present-day surgical chairs. Include among them the ability to recognize talent. Recognizing talent certainly includes knowing individuals who are excellent clinical surgeons, but more importantly, that recognition should include surgeons able to teach their knowledge and skills to others while giving increasing levels of responsibility to residents. In addition, department chairs must recognize intellectual curiosity and creativity in research combined with the drive and organizational and writing skills that make for an outstanding surgical scientist. A surgical chair must also recognize leadership talents among faculty members and promote leadership development. The most effective surgical chairs, both in the past and present, have had excellent time-management skills. Historically and into the present day, surgical chairs have had to be effective recruiters of talented faculty members.

Personal accomplishment and productivity have been essential traits to search committees selecting a surgical department chair both in the past and in the present. Surgical department chairs are characterized by intellectual curiosity. Most chairs have been effective teachers and mentors during their careers prior to and after taking department chair positions. Social skills and public-speaking ability remain common traits shared by surgical department chairs.

**A NEW STYLE OF LEADER**

Although surgical department chairs past and present share many traits, their necessary roles and skill sets now differ markedly. Souba has highlighted important traits of the surgical department chair, which are summarized in the Table. According to Souba, the important abilities of a surgical department chair in the past were personal achievement-oriented. In contrast, the emphasis today is on the department leader’s ability to learn, to adapt to change, and to help others succeed.

It is difficult to improve upon what Dr Souba has already written. However, to clarify my biases, I might add a few specifics to Dr Souba’s broad list. Today’s surgical chair must understand and represent all surgical specialties with an institutional rather than a parochial perspective. Although most chairs of surgery must endure enough regular administrative meetings to create calluses on our backsides, it is vital that the chair attend most of these meetings to provide critical, practical, strategic, operational, and clinical input into the administrative decision process. Today’s future-oriented surgical department chair must lead by example. The chair must provide an example of conduct in the operating room, in other patient care settings, and in all professional interactions. As part of this example, the surgical department chair should regularly attend the teaching conferences of the department of surgery and should take a share of the teaching burden. The chair must maintain the highest standards of professionalism, specifically with regard to honesty and professional integrity, and avoid any significant conflicts of interest. The chair must respect others’ unique knowledge and skills and learn to delegate responsibility to take advantage of the talents of other professionals in the department. Delegating responsibility is an effective method of developing leadership skills among faculty members within the department. As a group, we tend to be compulsive and detail oriented (to put it mildly), but we must avoid falling into the trap of micromanagement. The department chair must be respectful of others’ time by being prompt. The department chair must listen more than speak. One could describe today’s surgical department chair as someone who is gratified to shine in the reflected glory of the faculty members.

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**Table. Important Traits of the Chair**

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<tr>
<th>In the Past: Achievement-Oriented Abilities</th>
<th>Today’s Future-Oriented Chair</th>
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<tbody>
<tr>
<td>National stature, visibility, and recognition</td>
<td>Business and administrative experience</td>
</tr>
<tr>
<td>Recruited from prominent institution</td>
<td>Institutional orientation</td>
</tr>
<tr>
<td>Strong references and reputation</td>
<td>Emotional competence</td>
</tr>
<tr>
<td>Track record in research and funding</td>
<td>Resilience</td>
</tr>
<tr>
<td>Clinical competency</td>
<td>Fits with organization’s values</td>
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<tr>
<td>Appreciation for teaching</td>
<td>Communication skills</td>
</tr>
<tr>
<td>Reasonable social skills</td>
<td>Able to build and lead a team</td>
</tr>
<tr>
<td>Emphasis on what the candidate had accomplished personally</td>
<td>Results orientation</td>
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*This table combines information from Grigsby et al and Souba.
Although much of what I describe here reflects the challenges of adapting to a changing environment, I do not want to leave the reader with the impression that this job is all misery and no fun. As department leader, I have the opportunity to work and collaborate with the finest group of professionals in administrative and departmental leadership positions within the medical center. Today’s challenges differ from those for chairs of the past and from the challenges we faced in our positions before taking the department chair positions. Fortunately, most people who want to be department chairs thrive on facing new challenges and view them as opportunities. Information technology tools of today are capable of generating astounding amounts of data with which to make better informed decisions about financial performance and clinical practice. We face the dawn of a new era in which medical and surgical practice will be based, predominantly, on the best available scientific evidence. The influence of these powerful, positive, and progressive elements affecting surgery today fills me with optimism for the future of our profession and the role of the department chair.

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