I have thoroughly enjoyed my last 22 years of membership in the New England Surgical Society. I was humbled and honored to be selected as your 86th president and hope I have at least another 22 years of membership. I give a special thank you to our program committee, executive committee, and the team of Stan Alger, Jon Blackstone, and Heather Wood for the planning and operations of our meeting. And I give 3 cheers to the membership at large for your active participation at this meeting—as that participation is the soul of our society. The camaraderie of the New England Surgical Society and other surgical societies is a unique haven in today’s world of medicine as a business. This annual happening of educational and social interaction in an atmosphere of young and old, active and senior, university and community professionals, keeps us on the high road for our patients as opposed to our clients.

I remember fondly with gratitude my mentors, including Drs Francis D. Moore, Richard Wilson, and George Dunlop. I am likewise grateful for the special friends met along the way, Drs Murray Brennan, Ned Cabot, Dick Karl, Chip Moore, Mike O’Shea, and Richard Swanson.

The Study of Surgical Services for the United States report of 1975 recommended a need for 1600 to 2000 general surgeons to complete residency per year between 1976 and 2012 to fill the need for future generations. Those predictions were initially thought excessive. In 1975, there were 6.93 general surgeons per 100 000 people, and in 1994, there were 7.1 per 100 000.1 This stability occurred despite the number of graduates from general surgery training programs remaining in the 1000-per-year range from 1983 to 1996.2

Practicing general surgeons prevented an access-to-care crisis by increasing work volume and delaying retirement. Finally, declining medical student interest for surgery, increasing surgical subspecialization, shorter work hours, earlier retirement, and an aging population had organized medicine doing an about-face in the late 1990s. A shortage of specialist physician manpower by 2020 was then predicted. Limited access to care was by 2000 already becoming apparent. In 2001, there were 68 unfilled first-year positions in the general surgical match. It was in this environment that a “blue ribbon” committee was organized by the American Surgical Association in cooperation with the American College of Surgeons, the American Board of Surgery, and the Residency Review Committee. This group was asked to prepare a report on the current status of surgical education in the United States and make recommendations for the future. The committee included 3 members of this society and 2 guests of our meeting this weekend. The report was published in January 2005, and I recommend it for your reading. I quote from that report: “An important factor in physician workforce projections, particularly in surgery, is the role of women. . . . Unless surgical training and careers in surgery are made more attractive to women, a pipeline problem may develop.”3 Vigorous recruitment of medical students to core sur-
gical residencies and to general surgery has since been a major topic of study and action. More than 35 years ago, Betty Friedan, in writing The Feminine Mystique in 1963, encouraged women to abandon home duties and campaign for an increased presence in political, medical, religious, and military careers. The ball was kept in play with the establishment of the National Organization for Women in 1966 with Friedan becoming its first president in 1970, the year of my internship. In 1976, Dr. Francis Moore appointed the first woman chief resident surgeon at the Peter Bent Brigham Hospital. Thirty years later, women would make up the majority of our categorical general surgical positions at the University of Massachusetts, probably not unlike other New England programs. I am sure all will agree that women have answered Betty Friedan’s call to arms. Friedan died this year at a time when there is increasing concern about attrition of highly qualified women in business, law, medicine, and other careers. This concern has been recently documented in a renewed Friedan-type manifesto by Linda Hirshman, exhorting women to stay with the workforce in a different and tougher world than the world of Friedan. The women’s movement told women they could do it all. After 30 years, the combination of a full-time career and a fulfilling home life is being questioned.

In this context, I review the remote history of women in surgery up to 1970, which is so important in understanding the present and preventing mistakes in the future. I then highlight the growth in numbers of women to the surgical workforce from the Friedan 1970s to 2005, review several satisfaction surveys of 2001 through 2005 regarding perceived problems in recruitment and retention of women to surgery, and finally comment on whether sex differences are important in recruitment and retention. The blue ribbon committee of the American Surgical Association realized the importance of an open pipeline for women into surgery, but will it stay open?

REMOTE HISTORY

The history of women in surgery is remarkable for their role in the care of the sick and injured from primitive times to the present. It is a story of quality and not of quantity. The historical documentation for women’s efforts was recorded for the most part by men. Although expert in medical caregiving, the women were usually not medical writers with few exceptions.

Aboriginal peoples of ancient times, and those aboriginal studies of 20th century primitive tribes, document similar roles for men as hunter-gatherers and women as caregivers despite an interval of 7000 years. The same primitive practice was reflected in the Stone and Bronze ages in Sumeria. Around 3500 BC, flint surgical instruments were found buried with Queen Shubad of Ur, perhaps attesting to her surgical prowess. In 1500 BC, there is evidence of women enrolled in medical school at Heliopolis in Egypt. With the movement of civilization to Greece and Rome, women continued to be remembered as healers, often perpetuated in myths. “The Iliad” speaks of women removing spears and arrows.

Around 500 BC, women were recognized practitioners of midwifery, bloodletting, and bonesetting, although women were more likely than men to be criticized for aberrant results. During the time of Hippocrates, Agnodice performed abortions dressed as a man to avoid persecution. This subterfuge was to be used again for different reasons some 2000 years later when in the 1800s, a British army surgeon, Dr. “James” Barry, disguised herself in the battles of Waterloo and the Crimean wars. She was discovered at death to be a woman yet buried as a man because of the British War Department’s embarrassment.

In the first century, Galen wrote of Margareta, an army surgeon of some renown. A Greco-Roman gynecologist-surgeon Aspasia was reported to have operated for incarcerated hernia, and in the sixth century, the Egyptian woman Andromache was known to have used cautery rather than a knife in her surgery.

During the next 4 centuries, monastic living for men and women became popular, whereby old routines of hunter-gatherer and caregiving women continued. During the 11th and 12th centuries, medical teaching began to flourish in Salerno on the Italian coast. The term doctor was said to be first used here in the late 12th century. The most famous medical woman of the Middle Ages was Trotula, a professor at Salerno. She was noted not only for treatises on gynecology and midwifery but also for writings on skin diseases, syphilis, and epilepsy. She described an operation for ruptured perineum in detail. Her writings were to be held in regard for 500 years.

Salerno was a coeducational medical school, and Italy was to remain throughout the Middle Ages a country where medical school was open to women, unlike other parts of Europe.

The male-dominated Catholic church relegated women to an inferior position in the 11th to 12th centuries. Women, however, were the unsung heroes, continuing work as bloodletters, bonesetters, and obstetricians/gynecologists. In that same period, women were also involved in trauma care, extracting spears or lances and then treating the wounds with hot oil and wine. Although the church lost influence toward the end of the Middle Ages, the advent of burgeoning universities (most of which refused medical school admission for women), the beginning of physician reimbursement, and legal restrictions on female medical caregivers helped men keep women in menial medical activities, much the same as the church had done in the previous centuries. This role was not to be substantially changed for another 300 years.

With the fall of Constantinople and the age of the printing press, educational opportunities were more open but not necessarily for women. Although Italian medical schools were still coeducational, France and England were enacting laws to restrict women surgeons. Women caregivers were continually needed during the plagues and wars at this time, although they were not recognized as essential. Henry VIII established a surgical guild in 1540, yet women would not be allowed to join for another 300 years.

In the 17th century, surgery became a more defined specialty. Ambrose Paré described meticulous wound care with ties for hemostasis rather than hot oil or cautery. He made special efforts to teach women the surgeon’s craft. There were, however, enough restrictions on medi-
cal school admission and surgical licensure that women remained barber surgeons involved in midwifery and bloodletting.

With the discovery and colonization of the Americas at this time, my focus shifts to the history of American women in surgery. At the time of the American Revolution, the American colonies could boast of 2 medical schools and 335 doctors of whom 51 graduated from the American schools. Harvard Medical School was founded in 1782 by Dr James Warren, 20 years after the first American medical school. Harvard was not to formally admit women to the medical school until 1945.

In 1821, Elizabeth Blackwell was born in Bristol, England. The Blackwell family migrated to America in 1832 to campaign against slavery. Blackwell became interested in medicine after a family friend died regretting never having had the solace of a woman physician. She worked hard to be accepted at the Geneva Medical College in upstate New York in 1847 and became the first female graduate from an American medical school. She did her clinical experience in London and Paris since no clinical opportunities existed for women in the United States. She wanted to study for surgery, but losing sight in one eye, she abandoned the idea. Elizabeth, with younger sister Dr Emily Blackwell and Dr Marie Zakrzewska, opened the New York Infirmary for Women and Children in 1857 and eventually its medical school in 1867. These institutions would provide both education and clinical experience for women.

In parallel to Blackwell, Ann Preston was born in 1813 to a Quaker family in Pennsylvania that was involved in the antislavery movement. After many rejections, she entered the Female Medical College of Pennsylvania in 1850. It had been founded by a group of Quakers. A hospital and clinic opened later in 1861 for women’s hands-on clinical training. In 1866, Preston became the first dean of the Women’s Medical College of Pennsylvania. As dean, she made an affiliate arrangement for clinical training with other hospitals, notably the Pennsylvania Hospital, where it was recalled that the chief of surgery in greeting a new clinical rotation of men and women bowed only to the men and not to the women from the Women's Medical College.

Marie Zakrzewska left the Blackwells to become the professor of obstetrics at the New England Female Medical College. Again because of difficulty in obtaining clinical experience, Marie opened the New England Hospital for Women and Children. It was the second hospital in America to be run by women physicians and surgeons.

Dr Mary Edwards Walker was born in Oswego, New York, in 1819 and graduated from Syracuse Medical College in 1855. She was the first woman doctor commissioned in the US military, and in 1865, Dr Walker was awarded the Congressional Medal of Honor for surgical work she had done during the Civil War. Regrettably, the medal was recalled in 1917 because of insufficient evidence.

Dr Bertha Van Hoosen was born in Stony Creek, Michigan, in 1863, and after much effort, and against her parents’ wishes, she graduated from the University of Michigan's medical department in 1888 and eventually joined the New England Hospital for Women to complete a 4-year clinical study before beginning a private obstetrics/gynecology clinic in Chicago in 1892. In 1913, she became the director of gynecology at Cook County Hospital and was appointed head of obstetrics at Loyola University Medical School in Chicago in 1918. Refused membership into the Chicago Gynecological and Obstetrical Society and isolated in the American Medical Association, she helped found the American Medical Women's Association in 1915 and became its first president.

At this time, Florence F. Duchering, MD, became the first woman admitted to the American College of Surgeons in 1913 and Lillian Farrar, MD, subsequently served 5 consecutive terms as the first woman governor to the American College of Surgeons beginning in 1925.

The first woman surgeon I met was Nina Braunwald. She was born in 1928, attended medical school at Brigham Young University, and was the first woman to train in general surgery at Bellevue Hospital, New York, in 1952. She completed her general surgery and cardiac surgical residency at Georgetown University. She went on to lead the team implanting the first successful artificial heart valve. She was the first woman certified by the American Board of Thoracic Surgery and the first woman elected to the American Association for Thoracic Surgery. As a junior resident, I worked at the West Roxbury Veterans Affairs Hospital as part of the Brigham residency and was mentored by Dr Braunwald through my first cardiopulmonary bypass. She displayed steady nerves and patience, watching me make holes in the ascending aorta and right atrial appendage! (You had to be there.) This same equanimity was not always seen in her male colleagues.

Dr Tenley Albright was born in 1935 and was trained as a general surgeon during the same time she won the first American gold medal in figure skating. She recalled there were only 5 women in a class of 135 at Harvard Medical School in 1957 whereas today 56% of the class is female.

Bringing the history of notable women in surgery up to 1970, when I started my residency, is Frances Krauskopf. She was born in 1940 and attended Stanford School of Medicine, 1 of 12 women in a class of 60. In 1966, she was the first woman to pursue a surgical internship at Stanford, and she completed her residency in neurosurgery in 1975, the same year I completed mine in general surgery. Frances Krauskopf married Phil Conley, and it is Dr Conley’s name you might remember as the author of Walking Out on the Boys. Dr Conley made headlines in 1991 when she threatened to resign from her tenure professorship in neurosurgery at Stanford because of what she documented in 245 pages as a work environment of sexist attitudes and often overt sexual harassment. Much of what she said fell on deaf ears in the “boys’ club.” These same sex insensitivity issues were being discussed in all walks of life. Gradually, the era of political correctness, the increasing numbers of women in the surgical workforce, and the attention given the issue by younger leaders in surgery have helped defuse the boys’ club atmosphere highlighted by Dr Conley. Perhaps it is just a matter of time and more numbers before there is a woman president of the New England Surgical Society. After all, Kathryn Andersen is at this time the...
first woman president of the American College of Surgeons. (Coincidentally, at this fall’s clinical congress, the American College of Surgeons will host the 25th-year anniversary gala of the Association of Women Surgeons.) Despite the progress over 7000 years, however, there are perhaps subtle sex biases in the surgical workforce as evidenced in several satisfaction surveys reported in the new millennium.

**RECENT HISTORY**

Prior to discussing those surveys, I first review the uptick in women’s entry to medical schools, to surgical residencies, and eventually to faculty surgical positions, which was brought on with the women’s movement in the 1970s. The 30-year change in numbers of students, residents, and faculty members is similar to those in other professions during this time. In 1971, the average medical school class had 10% female enrollment, increasing to 28% in 1981, 38% in 1991, and 46% in 2001. The University of Massachusetts Medical School enrolled 30% women in 1981, a rate very similar to the nation’s, and this past year, almost 60% of the class were women. The recent rate reflects the college scene. In a July 2006 article in the *New York Times*, Tamar Lewin reported the significant gap in college grades and graduation rates between women and men. This gap appeared most acute in lower socioeconomic groups but even persisted in middle-class students with men performing less well than women. It is not surprising therefore to see a female majority in graduate school classes.

The American Medical Association in 2003 reported 225 000 women physicians representing 26% of the health care workforce compared with 11.6% in 1980. Of the 225 000 women, almost 41 000 were in training, representing 41% of the postgraduate workforce. The top-5 training programs were internal medicine, family medicine, obstetrics/gynecology, psychiatry, and anesthesiology, accounting for 63% of the 41 000 female trainees. Although general surgery fills approximately 90% of available categorical slots, the percentage of medical students seeking surgical residencies over the past 20 years has at best stayed the same. More of that percentage is accounted for in women, increasing from 10% to 21% in 1981, 14% in 1991, and 24% in 2001. This trend continued in 2001, with 39% female enrollment in surgical residency programs, compared with 21% in medicine. Males accounted for 34% of the 41 000 female trainees.

Satisfaction surveys have markedly risen in the past 2 decades, the findings of McMurray et al give one pause. McMurray et al published data on a 4-nation comparison of the entire physician workforce in 1999, including general surgery and the surgical subspecialties. Despite increasing numbers of women physicians in the previous 2 decades (1980-1999), there were sex differences in work hours, practice site preferences, income, personal view-points regarding life/work balance, rate of inactivity, and retirement. Women worked fewer hours at health care than men but worked longer hours if family care was included in the total. Women preferred urban settings, made less money, and in the United States were more likely to be listed as inactive (less than 20 hours a week) and to retire earlier than men.

**SATISFACTION SURVEYS**

Over the past 5 years, several articles have addressed the issue of sex and the surgical workforce. These included surveys of male and female university and community surgeons and satisfaction surveys of surgical students and residents. The results of these studies list lack of mentoring, insufficient time for a life/work balance, and sex bias as 3 stumbling blocks for women continuing in general surgery specifically and in the surgical subspecialties to varying degrees. I chose to look at these reviews chronologically. Lacking similar survey design, they can’t easily be compared, but they do tell a story.

The survey by Colletti et al of surgical academic faculty revealed that both men and women faculty reported the lack of mentoring and problems with life/work balance. All respondents were married except 1, and most women reported that their spouses were engaged in full-time careers. The men were 33% less likely to have a spouse with a full-time career. It was not surprising that 56% of women and only 20% of men missed work because of a family responsibility.

Although equal numbers (two thirds) reported having a mentor, the men were more likely (71%) to have a surgical faculty mentor than women (33%). This was thought to explain why the women were less likely to have been helped in understanding the process of academic advancement than male surgeons. This study did not highlight sexist comments and attitudes aimed at women surgeons.

In 2001, Yedidia and Bickel conducted 80-minute, open-ended interviews with 34 department chairpeople and 2 division chiefs (22 men, 14 women) on the paucity of women leaders in academic medicine. Fifteen of 36 interviews pointed to the late entry of women into the medical profession with many suggesting it was just a matter of time and numbers before women would “catch up.” This did not seem to fit with the perception of 28 of 36 interviewed, who thought women’s traditional role in child and family care posed a major obstacle to professional advancement. Both male and female chairs felt women lacked the early socialization of aggressive behavior in being tenacious and competitive yet were quick to point out that once in the job, women’s talents were a better fit for leadership. Twenty-two of 36 respondents identified incidents of sexism as a key obstacle in academic advancement. The lack of mentoring was also considered a major barrier. The chairs felt that both individual interventions with faculty and an institutional effort were necessary in addressing the inequities of the men and women faculty if the problem of advancement to leadership is to be solved.

Novielli et al in 2001 surveyed graduates of Jefferson Medical College as to their medical school aspira-
tions for surgical training and the effect on their residency choices. Only 6% of women vs 20% of men were interested in surgery at the beginning of medical school, and a higher percentage of women (76%) than men (50%) lost that interest during medical school. Only 6% of women became interested in surgery during medical school vs 19% of men. Performance in the third-year clinical clerkship was an important predictor of continued interest in surgery. Mentoring, life/work balance, and sex bias questions were not addressed.19

In 2004, Schroen et al20 surveyed members of the American College of Surgeons as to career satisfaction in academic general surgery. There was a marked difference in academic productivity as measured by the number of publications from men and women. This was associated with an increased number of women contemplating leaving academia vs men at the assistant professor rank. Women felt this situation was a result of a lack of appropriate mentoring and institutional support. Women were more likely than men to never marry and more likely than men to either have no children or to delay childbearing. Harassment was noted by significantly more women than men. A discrepancy in income was evident in ranks below full professor, although this was not controlled for productivity.20

Grandis et al21 in 2004 surveyed all 502 female members of the American Academy of Otolaryngology–Head and Neck Surgery and sent surveys to twice the number of men matched for years since residency, geographic location, and practice type. Responses came from 246 women and 427 men. The rates for overall satisfaction and rates of academic promotion were equivalent in the sexes, although male academic otolaryngologists were significantly more productive than women, judged by the number of peer-reviewed papers at the rank of assistant professor. Fifty-seven percent of women felt the need of same-sex mentoring, but only 18% of men felt this was important. Women in this study reported more sexism throughout all aspects of their training, and since completion of training, 31.4% of women vs 3.4% of men believed that sex discrimination affected their professional advancement.

Controlling for hours worked, years in practice, and practice type, women were found to earn significantly less ($35,000-40,000) than men. Household responsibilities were significantly different with 49% of men reporting a spouse or partner having a primary responsibility vs only 8.6% of the women. Men’s work hours were independent of the number of children whereas women’s were correlated. Both men and women agreed as to the lack of job-sharing opportunities and the lack of formal maternity leave policies at their institutions.21

Caniano et al22 in 2004 published a survey of 95 women pediatric surgeons. Both young (<45 y) and older surgeons (>45 y) mentioned excessive clinical work, on-call duty, lack of mentorship, and lack of support from the division director as major barriers to career success, yet more than 80% of the entire age range reported a high degree of career satisfaction. Seventy-three percent of the younger age group were married vs 53% of those older than 45 years. Forty-six percent had children, and the majority of those with children had their first child after completion of residency. Again, maternity leave was thought inadequate by 41%.

The majority of those older than 45 years reported assuming the majority of childcare and household tasks whereas those younger than 45 years reported that their spouses were the majority providers of childcare and household tasks. Despite this, women younger than 45 years were twice as likely to want more personal time. All respondents mentioned positive faculty surgical role models as a means to recruit female surgical students. From 84% to 100% of respondents, independent of age, listed lifestyle as the number-one factor in preventing recruitment.22

Just when you think you understand the problem, another survey reports an 85% overall career satisfaction unless your operative volumes are too low or you are out on maternity leave! End et al23 in 2004 surveyed 351 Austrian women surgeons for career satisfaction. Inadequate departmental organization and leadership, low operative volumes, and maternity leave had negative effects on job satisfaction. Subspecialty surgeons showed a trend toward more satisfaction than those women in general surgery, but this was not significant. Open-ended comments also mentioned “bullying” by colleagues and poor surgical training as contributors to career dissatisfaction. The workplace and not the family was the main source of stress. There was no direct mention of sex bias or life/work balance issues. Younger and older surgeons were more satisfied than middle-aged surgeons (aged 40-50 years). That those in the middle years were relatively less satisfied might reflect that young surgeons without children and old surgeons with poorer recall were falsely happy regarding life/work balance issues.23

Park et al24 in April 2005 conducted a survey of 359 fourth-year medical students in a convenience sample of 4 Canadian medical schools and a survey of 244 female general surgeons in Canada identified through the Royal College of Surgeons of Canada. Sixty-six percent of students and 77% of surgeons responded. Although 174 of 230 responding medical students expressed interest in surgery during medical school, only 5 women and 10 men planned to rank general surgery as a first career choice. Women students reported a lack of same-sex role models during clerkship and also were more likely to believe in sex-based discrimination than men during their clerkship. This discrimination was most commonly from surgical staff (35%), surgical residents (25%), nurses (17%), and patients (17%). Women students were more likely than men to consider family life, marriage, and child-rearing difficulties as deterrents to general surgery training. Despite this medical student observation, female surgeons surveyed disagreed. However, they offered suggestions for shared or part-time practices, improved parental leave, more flexible hours, and more accessible child care options. The study observed that women students choosing surgery were more likely to come from schools with more women faculty.24

Yutzie et al25 in 2005 performed a longitudinal survey of 189 men and women graduating between 1969 and 2003 from a community-based, general surgery residency training program with an 80% response rate. Thirty-five percent of all graduates entered fellowship training
without a significant difference between men and women. There was also no sex difference in practice type once established. There was no sex difference in the 60- to 80-hour workweek (the most common), yet more women (25%) than men (9%) worked fewer than 40 hours. Annual income was not significantly different except with incomes above $350,000, where more men (35%) than women (6%) were represented, although this income range was not common. Ninety-three percent of the graduates were satisfied or very satisfied with no statistically significant sex difference.25

Kass et al26 reported in 2006 on interviews with 10 women surgical leaders. Eighty percent of these women cited sex bias as a major obstacle in their careers, and despite 90% having mentors, 50% said this mentoring activity was ineffective.26 Factors for success highlighted by these women were those one would imagine for any professional career, whether man or woman.26

Pertinent to sex bias, one of the leaders remarked

We’re playing by a different game. Men are playing ball and there’s a coach, and you have to play within that world; we play dolls and everything is equal. You have to play by the rules and play ball and always talk to the coach and make the coach look good, and if you have a good idea, give it to the coach so the coach can look good.26

Another said, in speaking of obstacles

The obvious one is gender prejudice. I am petite and I was pretty good-looking when I was a young woman and this actually counted against me, elicit comments like, “Oh, you are too cute to be a surgeon,” “You got your husband; why don’t you quit now?” “You are just taking the place that should be occupied by a man,” and “You are too little,” “You are not strong enough,” etc. There was inappropriate touching and inappropriate comments in the operating room, which I still have a hard time talking about.26

This disturbing quote was balanced by a firm conviction that women leaders had a good deal to offer and did not perceive family life as an obstacle. They cited women’s teamwork, gentleness with tissues, better communication skills, and the ability to multitask. They felt this was an excellent time for women surgeons to change the stereotype of the macho workaholic surgeon.26

Finally, at this meeting last year, Gargiulo et al27 reported on an e-mail survey to 68 attending surgeons, 31 residents, and 199 medical students at the University of Vermont Medical Center. The attendings and residents were from the departments of surgery and obstetrics/gynecology. The response rates were about 50%. The major barrier to a career in surgery was the issue of lifestyle for both men and women. Women, however, viewed sex discrimination and an old boys’ network as another major deterrent to a surgical career.27

COMMENT

These reports, although not similar in design, have given a sense of where we are with sex and the surgical workforce whether at the student, resident, attending, or chair level. Perhaps one of the most reassuring aspects of surveys dealing with practicing women and men surgeons was the high degree of satisfaction with their chosen profession. The issue of life/work balance was mentioned as a deal breaker for many students, male and female, considering a career in surgery. Somehow the satisfaction of the attending surgeons is lost to many of the students who might be interested or who could become interested in a surgical career. This, I believe, speaks to a need for a more in-depth personal mentoring experience for our students and young residents so that they might share the positive career feelings. The importance of life/work balance is probably age related with the concern relatively absent from the interviews of chairwomen but very much on the minds of students, residents, and young attendings regardless of sex. This fits with the profile of generations X and Y, born between 1965 and 1984. These generations place a greater importance on family life and personal interests than previous generations.28 Although life/work balance issues were not mentioned often by men surveyed, the topic certainly figured prominently when male surgeons with a professional working spouse commented on responsibility for childcare and household chores. Improvement in life/work balance is anticipated by the 80-hour workweek but not yet studied. It would appear at this time that 70% of the younger trainees support the 80-hour workweek, but that number falls for senior residents and attendings. The 80-hour workweek and other means to reduce workload except for physician extenders are not necessarily considered the answers to lifestyle issues by program directors.29 We all need to find our comfort level with this new paradigm. It must be monitored for its effect not only on patient care and training, but also on life/work balance satisfaction.

Maternity leave for not only mothers but also fathers needs to be formalized at the institutional level and supported at the departmental level. The surveys point out that childbearing has often been delayed or entirely avoided. Efforts to accommodate this during residencies will help prevent career changes for women who might have delayed childbearing until the attending years. Similar to time off for research or military commitment, childbearing and childrearing might best be served with 1- to 2-year break from residency rather than a 6- to 8-week hiatus. This could be structured into a new core curriculum. For this type of effort not to be seen as a burden by others, a quid pro quo needs to be worked out either with financial bonuses or time bonuses. Although flexible scheduling is an oxymoron to many of our senior residents and attendings, it is certainly a necessity for the future. With our recent wars and consequent military commitments, residents, attendings, and surgical departments have had to deal with flexible scheduling. Flexible scheduling also relates to departmental meetings. Most of us agree there are too many meetings. Administrators and department chairs need to be aware that meetings starting very early or late in the day do not always work for a surgeon getting children to and from daycare or school. Sharing patients in a discipline previously noted for personal responsibility to each and every patient will need to be practiced more effectively yet with the same knowledgeable empathy from the physician. Communication between surgeons and between surgeons and patients will become a key success indicator.
for this type of scheduling. Competition among partners to do 1 more case or write 1 more paper needs to become obsolete with preference given to a collaborative staff. Burnout will become less and our workforce will be more robust for longer periods. Older, nonoperating surgeons might stay on as office support in times of flex scheduling.

Mentoring will need to be an active, formal, yet personal dialogue between the student or resident and the attending surgeon. Although the data thus far do not support the necessity for same-sex mentors, it would appear that where possible, especially with women, same-sex mentors should be sought. This will become easier as the numbers increase but will not succeed without a conscious effort within surgical departments. Our section of surgical oncology at the University of Massachusets Memorial Medical Center has influenced several medical students of both sexes to consider the subspecialty. Male and female medical students are impressed by not only the life/work balance satisfaction of our 3 women surgical oncologists, but also by their clinical and research endeavors in fields as diverse as hepatic and pancreato-biliary surgery and breast surgery. Inclusion of residents in the Resident and Associate Society of the American College of Surgeons will serve as an institutional mentorship, helping to make all, whether woman or man, feel part of a larger scene and prevent feelings of isolation.

Once the student and young resident move along in the profession, it will become important to continually check on the mentoring relationship, which will need to expand or change. It is in the middle years, especially in academic settings from assistant to associate professor, that there is a stalling of enthusiasm in women surgeons more than in men. Often this pause has been associated with childbearing and childrearing. Financial discrepancy between the sexes at this juncture should be avoided or at least dealt with in a manner satisfactory to our young. Although there was discrepancy noted in income, it was not viewed as a major obstacle. Transparency in our remuneration systems becomes more important than the actual dollars delivered. Inclusion will need to be the byword not only for committees but for clinical and/or research efforts and leadership roles in departments or practices. This has evidently been better dealt with in community practice, where many of the women surgeons have headed after dissatisfaction with their advancement in the university setting.

The surgical workforce is not alone in a concern about retaining women who are distressed by life/work balance and mentoring (networking) issues. Recent articles in the New York Times31,32 detailed difficulties with life/work balance and mentoring in both the law and financial fields. The lack of advancement to partner in law practices can be equated to the lack of advancement to professor in academic surgery.

What the law professionals denied was any semblance of sex bias or sexism. It was distressing in the surgical women’s satisfaction studies to learn of the high incidence of perceived and actual sexism. Other professions perhaps have been more attuned although all institutions struggle with this. Women surgeons in the past have “gone along” from ancient history through the mid 1800s (with women disguised as male surgeons) to Dr Conley and her descriptions of the boys’ club. I was interested in a recent Boston Globe article31 citing a girls’ camp rifle team always beating the boys because the girls were “probably showing off” and the comments of our women surgical chairs advising the best way to avoid sex bias is “just to be better.”32 Will this not lead to more of the same competition and perhaps a different type of macho? Sexism, like racial and ethnic bias, is sometimes difficult to define unless obvious. There is often legitimate disagreement on what constitutes sex bias as evidenced by the varied reaction to recent comments by the former president of Harvard University and the recent brouhaha at the Massachusetts Institute of Technology over a Nobel Prize winner’s supposed intimidation of a young woman recruit. When sexism is obvious, however, there needs to be departmental and institutional response. Dr Jo Buyske perhaps summed up sex bias best in an essay written for the Archives in March 2005. She said, “A subterranean sense of being different is at the heart of our current discussion about women and surgery.”34 This sense of difference should not relate to the ability to do the work whether it is in the laboratory, operating room, or office. It should relate to a positive sense of difference, such as networking and collaborative abilities, admittedly often the strengths in our women surgeons. Valian32 has discussed “gender schema,” which is the concept of “shared beliefs about expectations for men and women.” The schema hypothesizes that sex bias becomes a non-issue when 30% penetration of the minority sex occurs in the workforce.35 Surgery is almost there.

Finally, it is as one of the women chairs suggested: “It’s not about macho, competition, or swagger, but about listening and valuing the individual for what they want to become.”23 My conclusion about sex and the surgical workforce is that it does matter. We need to pay attention to the surveys, perhaps doing some of our own with future members of the New England Surgical Society. The women in the surveys have pointed out important considerations of life/work balance, mentoring, and sexism, and I hope I have demonstrated the centuries-old abilities of women as caregivers and their struggle to become equal partners with men in that work. This need not be a struggle, but we as leaders in surgery must put flexibility in our surgical work paradigm, actively support career-long mentoring, and be aware that only bias in a positive sense will help make surgery a better place to be and will ensure that the pipeline of students, residents, and attendings stays open for both sexes. Communication will be the backbone of these considerations. We in the New England Surgical Society should think globally and act locally.

Correspondence: Robert M. Quinlan, MD, University of Massachusetts Medical School, Department of Surgical Oncology, University of Massachusetts Memorial Medical Center, 119 Belmont St, Worcester, MA 01605 (quinlanr@ummhc.org).

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