

Trends in Gender Representation at the American College of Surgeons Clinical Congress and the Academic Surgical Congress: A Mixed Picture of Progress

Allison R Wilcox, MD, Spencer W Trooboff, MD, MBA, Christine S Lai, MBBS, FACS, Patricia L Turner, MD, FACS, Sandra L Wong, MD, MS, FACS

BACKGROUND: There has been increasing attention to gender inequity in speakers at professional meetings. The aim of this study was to evaluate temporal trends in representation of women at the Academic Surgical Congress (ASC) and American College of Surgeons Clinical Congress (CC), 2 prominent general interest, national surgical meetings.

STUDY DESIGN: We reviewed ASC (2014–2019) and CC (2013–2018) meeting programs to determine counts and proportions of invited panelists and moderators by gender, including the frequency of men-only panels. We conducted trend analyses to assess for temporal change in gender representation and univariate tests of association between different measures of gender representation.

RESULTS: The overall proportions of women panelists were 35% (ASC) and 28% (CC). There was a significant increase in the proportion of women panelists over the study period at the CC (23% to 34%, $p = 0.007$) but not at the ASC (37% to 36%, $p = 0.79$). The proportion of men-only panels decreased significantly over time at the CC (38% to 23%, $p = 0.04$), but not at the ASC (23% to 17%, $p = 0.50$), while the proportion of moderators at the ASC increased significantly (31% to 43%, $p = 0.01$), but not at the CC (29% to 37%, $p = 0.40$).

CONCLUSIONS: Women remain in the minority of panelists and moderators at the ASC and CC meetings, and approximately 1 in 5 panels are composed entirely of men. Although progress has been made at both meetings, ongoing and deliberate attention is needed to ensure continued progress toward the goal of equitable gender representation in academic surgery. (J Am Coll Surg 2019;229:397–403. © 2019 by the American College of Surgeons. Published by Elsevier Inc. All rights reserved.)

Inequities in the advancement of women to leadership positions throughout medicine are well described.^{1–3} As demographics continue to shift in medicine,⁴ increasing attention is being paid to the persistence of these inequities and how best to challenge the status quo. In particular, it is widely recognized that scholarly publications and participation at academic meetings and on specialty

committees play a critical role in recognition and career advancement. Yet recent data from numerous medical disciplines, including surgical specialties, demonstrate that women continue to lag behind men in all of these arenas.^{5–10}

In the last 20 years, there have been various efforts to challenge these inequities, including at academic

Disclosure Information: Nothing to disclose.

A preliminary analysis of a portion of these data was presented at the 14th annual Academic Surgical Congress, Houston, TX, February 2019.

Received May 8, 2019; Revised June 17, 2019; Accepted June 17, 2019.

From the Department of Surgery, Dartmouth-Hitchcock Medical Center (Wilcox, Trooboff, Wong) and The Dartmouth Institute for Health Policy and Clinical Practice (Trooboff, Wong), Lebanon, NH; the Division of Surgery, The Queen Elizabeth Hospital, University of Adelaide, South

Australia, Australia (Lai); The American College of Surgeons (Turner) and the Department of Surgery, University of Chicago Medicine (Turner), Chicago, IL; and Geisel School of Medicine at Dartmouth, Hanover, NH (Wong).

Correspondence address: Sandra L Wong, MD, MS, FACS, Department of Surgery, Dartmouth-Hitchcock Medical Center, 1 Medical Center Dr, Lebanon, NH 03756. email: Sandra.L.Wong@hitchcock.org

meetings. For instance, in 2003 the NIH released updated guidelines encouraging “appropriate representation of women,” among other individuals and groups traditionally under-represented in science, at meetings supported by any NIH funding.¹¹ However, despite these guidelines and increased awareness of the challenges, there has been little accountability for equitable representation of women at surgical meetings. The recognition that forward progress in leadership positions in surgery will require associated increases in women’s participation in visible roles at academic meetings prompted a recent call to action, in which surgical meetings were challenged not only to improve equity, but also to track and share their reports publicly.¹² However, this has not yet been incorporated as standard practice, and historical data are also lacking.

Here, we present our findings of gender representation at 2 prominent surgical meetings: the Academic Surgical Congress (ASC) and the American College of Surgeons Clinical Congress (CC). At these national meetings, panelists address topics spanning the field of general surgery as well as surgical subspecialties. The aim of this study was to evaluate the representation of women at the ASC and CC in an effort to capture and report data from the past 6 years, as well as to describe any corresponding trends over time.

METHODS

This is a descriptive, retrospective study of the gender of panelists and scientific session moderators over the past 6 years at the ASC (2014–2019) and CC (2013–2018). Our primary outcome was the overall proportions of women panelists and women moderators at the ASC and CC. Secondary measures included the proportion of panels composed entirely of men and the proportion of women on program committees.

Descriptive panelist, moderator, and program committee member data for the ASC were derived from publicly available online meeting programs. Programs were reviewed and data were manually extracted and verified. For the CC data, American College of Surgeons Member Services provided a spreadsheet containing speaker names, session codes, and session titles for all programming during the reviewed years. Program committee membership is published each year in the meeting program, from which we gathered this information. The gender of panelists, moderators, and program committee members were determined via internet search. All genders were able to be identified in this method for ASC participants; the genders of 3 individuals were unable to be identified

via internet search for the CC, and Member Services provided verification.

Definitions and characterization of panels, panelists, scientific sessions, moderators, and program committees

Panels: These sessions are inclusive of invited talks.

ASC: Hot Topic, Committee, and Presidential Sessions, all of which are convened in panel format.

CC: Designated Panel Sessions with didactic content.

Panelists: All invited speakers on panels, as defined above, were counted as panelists. If an individual served as a speaker on more than 1 panel, he or she was counted uniquely for each session. If an individual served as a moderator and panelist, he or she was counted as a panelist. If an individual served solely in the role of moderator, he or she was not counted as a panelist.

Scientific sessions: These sessions are inclusive of refereed podium presentation sessions.

ASC: Integrated quick shot and integrated oral presentations, as well as plenary session presentations.

CC: Scientific Papers and Surgical Forum Abstract Sessions (2013 to 2014); nomenclature updated in 2015 to the “Scientific Forum,” which encompasses all selective abstract presentations.

Moderators: All individuals who were listed as moderators of a scientific session, as defined above. The role of a moderator is to keep presenters on time and facilitate questions after each presentation. If an individual served as a moderator for more than one scientific session, he or she was counted uniquely for each session.

Program committees: These are groups of individuals who are charged with, among other things, inviting speakers and moderators to serve on panels and scientific sessions.

ASC: Composed of members of the Association for Academic Surgery Program Committee and the Society of University Surgeons Publications Committee.

CC: Composed of members of the Program Committee.

Data analysis

We performed descriptive analysis of the proportional gender representation of women panelists and moderators at both meetings. We performed chi-square tests for linear temporal trends in proportional gender representation and Spearman’s rank correlation coefficient to examine

associations between different measures of gender representation. All statistical analyses were performed using Stata 15.1/IC (StataCorp LLC).

RESULTS

Academic Surgical Congress

From 2014 to 2019, there were 329 total panelists at the ASC, 116 (35%) of whom were women. The proportions of women panelists were nearly equal in the first and last years of our study period, at 37% (24 of 65) in 2014 and 36% (18 of 50) in 2019. In the intervening years, proportions ranged from a low of 23% (9 of 39) in 2016 to a high of 42% (24 of 56) in 2018. There was no appreciable trend associated with the proportion of women panelists at the ASC over the 6 years studied ($p = 0.79$) (Fig. 1A).

There was a similarly nonlinear evolution in the number of men-only panels over this time period. In total, there were 71 panels at ASC meetings, of which 14 (20%) were composed entirely of men. The highest proportion of men-only panels was seen in 2016, when 55% (6 of 11) of panels were comprised entirely of men; the lowest

proportion was in 2017, at 0% (0 of 12). There was no associated trend over the intervening years ($p = 0.50$) (Fig. 1B). We did find that decreases in men-only panels were inversely correlated with increases in women panelists, though this correlation was not statistically significant ($r = -0.63$, $p = 0.18$). Of note, over the 6 years studied, there were 2 women-only panels (3%).

Scientific sessions comprised the majority of the programming at ASC meetings and therefore, session moderators accounted for the majority of invited speakers. There were 1,004 total moderators across 6 years, of whom 305 (30%) were women. Taken by year, 31% (40 of 130) of session moderators were women in 2014 compared with 43% (89 of 207) in 2019. Despite variability in the proportion of women moderators in the intervening years, there is a statistically significant trend demonstrating an overall increase ($p = 0.01$) (Fig. 2A). We also found a nonsignificant moderate correlation between overall increases in the proportion of women moderators and increases in women panelists ($r = 0.25$, $p = 0.63$).

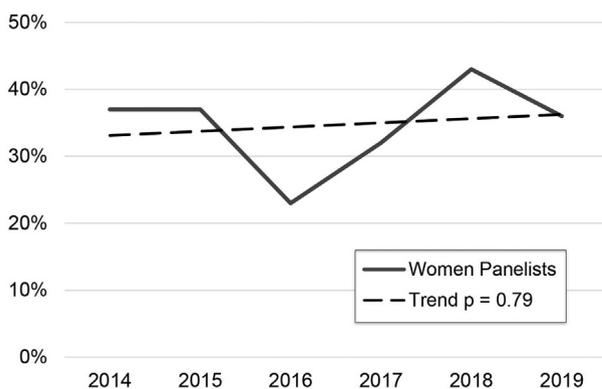
The proportion of women on the ASC program committee ranged from 22% (13 of 59) in 2015 to 39% (25 of 64) in 2019. There was a statistically significant correlation between a higher proportion of women on the program committee and higher proportion of women moderators ($r = 0.829$, $p = 0.04$). However, there was no correlation between the proportion of women on the program committee and the proportion of women panelists ($r = 0.286$, $p = 0.582$) or men-only panels ($r = -0.387$, $p = 0.449$).

American College of Surgeons Clinical Congress

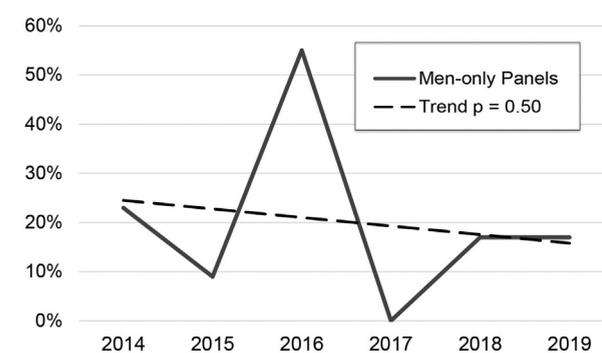
From 2013 to 2018, there were 3,363 total panelists at the CC, 952 (28%) of whom were women. The proportion of women on panels demonstrated a significant uptrend over the 6 years studied, from 23% (112 of 481) in 2013 to 34% (187 of 553) in 2018 ($p = 0.007$) (Fig. 3A).

There was a total of 693 panels over 6 years. Of these, 205 panels (30%) were composed entirely of men. Analyzing by year, the proportion of men-only panels decreased significantly, from 38% (38 of 101) in 2013 to 22% (26 of 117) in 2018 ($p = 0.04$) (Fig. 3B). We found that increases in women panelists showed a strong inverse correlation with decreases in men-only panels ($r = -0.96$, $p = 0.002$). Of note, over the 6 years studied there were 10 women-only panels (1%).

Though scientific sessions represented a smaller proportion of the overall programming at the CC, moderators accounted for a sizable proportion of invited speakers. Overall, there were 626 moderators and 202 (32%) were women. Although 29% (23 of 78) of moderators

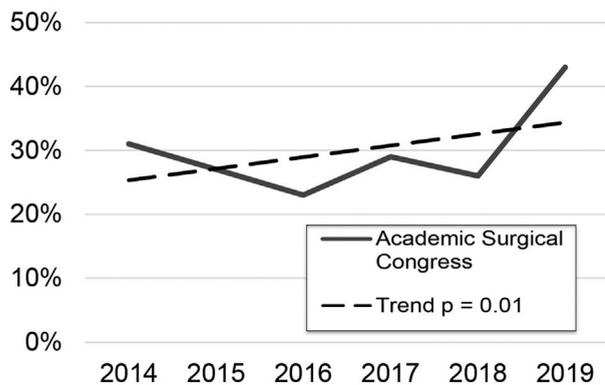


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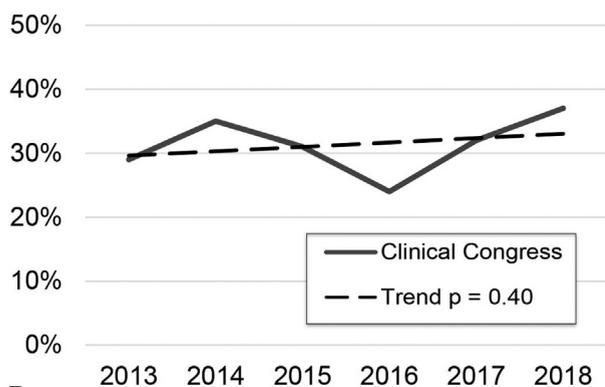


B

Figure 1. Panels at the Academic Surgical Congress. (A) Proportion of women panelists at the Academic Surgical Congress. (B) Proportion of men-only panels at the Academic Surgical Congress.



A



B

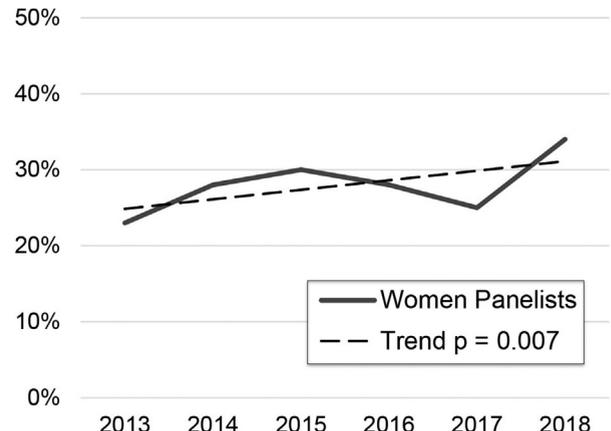
Figure 2. Session moderators at the Academic Surgical Congress and the American College of Surgeons Clinical Congress. (A) Proportion of moderators at the Academic Surgical Congress. (B) Proportion of moderators at the Clinical Congress.

at the CC were women in 2013 compared to 37% (58 of 155) in 2018, there was no demonstrated trend associated with this increase over the study period ($p = 0.40$) (Fig. 2B).

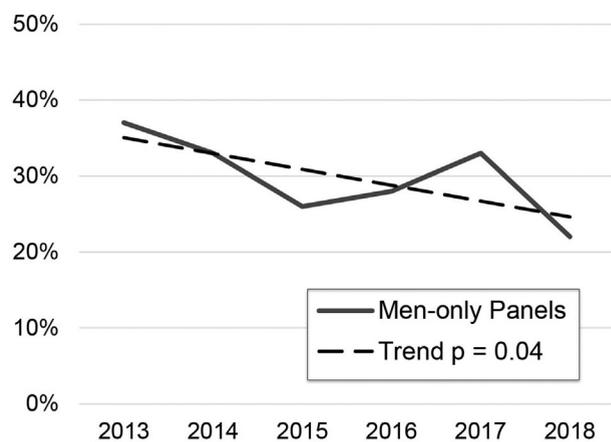
The proportion of women on the CC program committee ranged from 20% (3 of 15) in 2017 to 38% (5 of 13) in 2014 and 2015. There was no correlation identified between the proportion of women on the program committee and associated proportions of women moderators ($r = -0.005$, $p = 0.993$), panelists ($r = 0.077$, $p = 0.885$), or men-only panels ($r = -0.029$, $p = 0.956$).

DISCUSSION

Over the past 6 years at 2 prominent national surgical meetings, women have comprised approximately 1 in 3 invited panelists and moderators. At the beginning of the study period, women represented 37% of panelists at the ASC but only 23% at the CC; after 6 years, the



A



B

Figure 3. Panels at the American College of Surgeons Clinical Congress. (A) Proportion of women panelists at the Clinical Congress. (B) Proportion of men-only panels at the Clinical Congress.

proportions were similar (36% and 34%, respectively). The proportion of women moderators demonstrated a statistically significant uptrend at the ASC (31% to 43%), but this was relatively stable at the CC (29% to 37%). Meanwhile, approximately 1 in 5 panels were composed entirely of men over this time period, with a statistically significant decrease seen at the CC by 2019, but not at the ASC.

Our findings are similar to those from other specialties in medicine, which have identified a range of imbalances in gender representation at scientific meetings. For example, in a recent analysis of American Society of Anesthesiology annual meetings, the authors reported 75% of speakers were men, with nonsignificant increases in the overall proportion of women speakers over time.⁸ A similar study of 5 critical care conferences found lower

proportions of women speakers compared with men, and only 2 of the 5 meetings demonstrated improvements in representation over time.¹³

The rapidly growing proportion of women medical students and surgical trainees, and their active participation at national meetings, underscores the timeliness of reporting and tracking gender parity at surgical meetings. The changing demographics of membership at the American College of Surgeons, which convenes the CC, provides some context. In 2013, 7.2% of the College's roughly 64,000 Fellows were women. By 2018, 9.7% of Fellows were women, representing a 2.4% increase over time. This has been outpaced by the extent of, and growth in, membership of women medical students, from 35.2% to 43.8%, and residents, from 34.6% to 39.6%, over the same period. By this measure, representation of women panelists and moderators at the CC (28% and 32%, respectively) is actually proportionally higher than its Fellow membership and is more on par with the College's student and trainee membership.

History has shown that there is a lag time between increases in diversity in medical practice and associated increases in inclusion and representation among leadership.^{14,15} Moreover, in light of the evidence demonstrating that women tend to leave academia at higher rates than men, we cannot expect that increasing the number of women surgeons will guarantee an associated increase in women surgeon leaders.³ Women trainees will benefit from visible role models and mentors as they attempt to advance in their careers.¹⁶

We analyzed the proportion of men-only panels in this study in light of the fact that this measure of gender representation has come under increasingly public scrutiny in industries beyond medical and scientific meetings.¹⁷⁻¹⁹ An encouraging finding from our study is that the decrease in men-only panels, the so-called "manels," at the CC strongly corresponds with an associated increase in the proportion of women panelists; the correlation is also apparent at ASC meetings, though it did not reach statistical significance. Though it may seem intuitive that a decrease in men-only panels would be associated with an increase in women panelists, there are many ways in which to decrease men-only panels without truly increasing the proportion of women. For example, the number of men-only panels could decrease by increasing the total number of people serving on each panel in order to accommodate the addition of a woman panelist, and this could be done without appreciably changing the proportion of women overall. Efforts to add a woman to a panel may give the appearance of improved equity, but risks becoming subject to tokenism, especially if there aren't overall efforts to promote diversity and inclusion

in professional societies. We did identify several women-only panels, and these were predominantly on topics that have traditionally been considered "women's interest." Of the 10 all-women panels identified at the CC, 4 were on the topic of breast surgery and 4 were on the topic of women in surgery. Similarly, at the ASC, there were 2 women-only panels, 1 of which was an Association of Women Surgeons luncheon on the topic of negotiation, and the other was about emotional intelligence and burnout prevention.

We considered the data from these 2 meetings separately given the unique characteristics of each. The ASC is a joint annual meeting of 2 surgical organizations, the Association for Academic Surgery and the Society of University Surgeons, and is dedicated to the advancement of surgical research and academia. Panels comprise a relatively small proportion of the overall program, and scientific abstract presentations are a prominent component of the meeting. As a result, moderators are featured widely, providing opportunities for early- and mid-career faculty to gain visibility and share their expertise. Alternatively, the CC is a general interest clinical meeting for surgeons from both academic and nonacademic, community-based backgrounds. Panels comprise a large proportion of the programming at this meeting and were therefore of particular interest in our analysis. Despite their differences, these are 2 of the most prominent general interest surgical meetings in the country and are a likely barometer of other surgical meetings.

Panelists and moderators are invited roles, and the program committee of each academic meeting is responsible for identifying and inviting individuals to serve in these roles. It has been shown that increasing the proportion of women on program committees is associated with an increase in the proportion of women who are invited speakers at scientific meetings.²⁰⁻²² However, with the exception of women moderators at the ASC, we did not demonstrate this same trend. There are many reasons that may account for this difference. First, positions on both the ASC and CC program committees are multiyear roles, so even when new members join the committee, the majority of the committee is the same from 1 year to the next, such that it might take longer than the 6 years we studied to detect a change. Additionally, the CC program committee depends on input from more than 30 liaison groups. Because we were not able to account for these individuals, it is possible the balance of women involved in selecting speakers and moderators for the CC is different than the composition reflected in the formal committee membership.

Deliberate action can be taken to increase the inclusion of women in prominent invited roles at surgical meetings.

First, some research suggests that increasing the number of women on program committees increases the number of invited women speakers. Though our data did not corroborate this, it is still worthwhile for conference leadership to assemble a program committee that reflects the diversity they hope to see at the meeting itself. Moreover, as women are making up increasing proportions of medical students and surgical residents, the program committees might also do well to diversify the ages, training level, and academic rank of program committee members in order to broaden the pool of speakers that are known to the committee. Finally, organizations can also set specific goals for the promotion of equity and inclusion. For example, the Royal Australasian College of Surgeons recently adopted a Diversity and Inclusion Plan that establishes specific actions to achieve goals including diversity of leadership and gender equity. Though there are likely different strategies that will best suit different organizations, an important starting place for all is to collect data like those presented here, share them with membership, and track them over time.

Our findings should be considered in light of several limitations. First, any approach to identify participant gender in the public sphere is limited, as it is not possible to absolutely confirm how each participant self-identifies his or her gender. There are numerous variables that contribute to the ultimate composition of meeting programs, including last minute additions and cancellations, which we may not have completely accounted for. The trend analyses we performed assume linear changes in proportional representation over time; this assumption was violated for the trend analysis of men-only panels and women moderators at the ASC and reflects a relatively short, but meaningful, study period. Finally, we considered the appearance of each panelist or moderator independently, so repeated appearances by a relatively smaller number of women during the same meeting could overestimate the true extent of gender diversity at these conferences.

CONCLUSIONS

Women remain in the minority of panelists and moderators at the ASC and CC meetings, and a significant proportion of panels are still composed entirely of men. However, progress has been made in decreasing the number of men-only panels and increasing the number of women speakers at both meetings. Ongoing evaluation of trends will be necessary to ensure that these meetings continue to strive for, and ultimately achieve, equitable representation of women. Going forward, tracking and reporting of these data should be formalized as standard

operating procedure for surgical meetings. Guidelines on how to achieve better gender representation at surgical meetings should be provided to organizers and program committees as part of overall efforts to improve diversity and inclusion in surgery, which is known to enhance quality and facilitate excellence.

Author Contributions

Study conception and design: Wilcox, Lai, Wong

Acquisition of data: Wilcox, Turner, Wong

Analysis and interpretation of data: Wilcox, Trooboff, Lai, Turner, Wong

Drafting of manuscript: Wilcox, Trooboff

Critical revision: Wilcox, Trooboff, Lai, Turner, Wong

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