



# Diversity in the Last Decade of the Association of Program Directors in Surgery: A Descriptive Analysis of Leadership and Future Directions

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**OBJECTIVE:** The Association of Program Directors in Surgery Diversity and Inclusion Taskforce (APDS-DIT) was created in 2017 after the Executive Committee recognized low diversity in its membership. The DIT was charged to address gaps in diversity and inclusion at various phases of training and development from medical student to surgical leader. The aim of this study was to examine APDS demographics and determine the status of inclusion of women, racial and ethnic minorities, and nonuniversity surgeons.

**DESIGN:** Eleven years (2008-2018) of APDS annual-meeting programs, web directory, 2018-membership lists, and 2017-AAMC data were analyzed. Leadership positions were examined by officer (program chair/vice chair, executive committee, and board of directors). Internet searches identified gender, race, and institutional affiliation. Representative members to other organizations, resident liaisons, and historian members were excluded. APDS "Member," "Associate," and "Resident" lists and AAMC data were divided by gender.

**RESULTS:** Fifty-one individuals fulfilled 223 leadership positions over 11 years; 13 (25%) were women and 5 (10%) were non-Caucasian. Since 2013, the percentage of nonuniversity surgeons in APDS leadership has declined while, over the last 2 years, the percentage of women and ethnic/racial minority has increased. In 2018, the percentage of women in leadership (38%) was higher than the percentage of women in membership (combined total of program directors and associate program directors [26%]) and nonuniversity-affiliated

surgeons comprised 35% of the APDS membership but only 14% of leadership roles.

**CONCLUSIONS:** Over the last 11 years, representation of women, non-Caucasians, and nonuniversity surgeons has been at or less than 1/3 of their counterparts. As an organization that is tasked with creating future generations of the surgical workforce, it is imperative to recognize an underrepresentation of those members with diverse backgrounds that would add to the creative growth of the organization. The creation of the APDS-DIT emphasizes the organization's commitment to diversity and inclusion and an effort to create a pipeline of diverse leaders in the APDS and surgical training in general. (J Surg Ed 76: e125–e131. © 2019 Association of Program Directors in Surgery. Published by Elsevier Inc. All rights reserved.)

**KEY WORDS:** diversity, inclusion, surgery, education, leadership, APDS

**COMPETENCIES:** Professionalism, Interpersonal and Communication Skills, Practice-Based Learning and Improvement

## INTRODUCTION

In recent years, greater attention has been paid to the inequities in the surgical workforce in terms of pay-gap, promotion, and opportunity for women and racial minorities.<sup>1</sup> According to the Association of American Medical Colleges (AAMC), in 2017, 21% of total active general surgeons are women. However, women account for 11% of full-time surgery professors and less than 5% of all surgery department chairs. Nonwhites make up 33% of surgery full-time faculty, 23% of surgery professors, and 21% of all surgery chairs.<sup>2,3</sup> In both the United

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States and the United Kingdom, male surgeons earn an estimated 20% more than female surgeons.<sup>4,5</sup> There is a paucity of information on the disparities that may exist among lesbian, gay bisexual, transgender, queer surgeons, and those with disabilities.

Diversity and inclusion are vital to the success of surgery as a clinical practice and within its organizations. The perspectives, challenges faced, and solutions in surgery and surgical training may vary by the training or practice setting (academic vs community). In the business and technology industries, increasing diverse perspectives has been shown to increase creativity, productivity, and innovation.<sup>6-8</sup> The gender and race of physicians have been reported to affect patient trust, medical/surgical outcomes, access to care, and participation in clinical trials.<sup>1,9-11</sup> To address this growing need for equity, many national and international surgery departments and organizations have emphasized diversity and inclusion by establishing training programs, writing mission statements, and publishing position papers.<sup>1,9,10,12-14</sup> In 2017, the Association of Program Directors in Surgery (APDS) Executive Committee identified diversity and inclusion as a priority and convened a taskforce. A call for volunteers was conducted electronically to APDS members. The Diversity and Inclusion Taskforce (DIT) was created to address gaps in diversity at various phases of training and development from medical student to surgical leader. To execute this mission, the DIT made one of its first goals to look within and examine the society and its leadership. We hypothesized that an examination of the APDS demographics over 11 years would demonstrate that women, minorities, and nonuniversity-affiliated surgeons in leadership, would be lower than that of their counterparts and of the membership at large.

## MATERIALS AND METHODS

Eleven years (2008-2018) of publicly available APDS annual-meeting program data, web directory, APDS-membership lists, and AAMC data were analyzed. APDS meeting programs were available in print for recent meetings and on the website from 2008. Leadership positions were examined including president, president-elect, secretary, treasurer, program chair, vice chair, executive committee, and board of directors. Internet searches of the individual APDS leaders examining photo and website information, identified gender (Man or Woman), race (Caucasian or non-Caucasian) and institutional affiliation at the time their position was held. Institutions were considered to be a "university" if this was in the name of the institution, if clear affiliation was noted on the institution website, or if size or resource pool was comparable to a large academic center. Representative members from and to other organizations, resident liaisons, and honorary members were

excluded. APDS membership lists (labeled as "Member" [program director], "Associate" [associate program director], and "Resident") were obtained from the organization in May 2018. These lists included gender and institution information, but did not include race or ethnicity. The APDS web directory was explored using the website, in November 2018. The web directory is a list of APDS participants rather than solely members and includes current and former APDS members, residents and program administrative staff. The directory lists names, addresses, and phone numbers, but does not specify title, gender, or ethnicity. Gender was assigned to individuals in the directory based on common association of the name with a male or female. AAMC 2017 data from the website (as of January 2018) was available and utilized for the manuscript preparation. The data and the manuscript were reviewed by AAMC data analysts for accuracy. Descriptive statistics were calculated with Microsoft Excel software (version 2016). IRB exemption was obtained.

## RESULTS

According to the AAMC 2017 Workforce Data, 20.6% of the 25,022 active general surgeons in the United States were women. Of the 15,681 full-time faculty in surgery departments, 33.4% were in a nonwhite racial/ethnic category and 24.5% were women. Of the 3,896 full professors, 22.9% were not white and 11% of those were women. There were 369 surgery department chairs, 78 (21%) were from a racial or ethnically diverse background, and 17 (4.6%) were women. Female general surgery residents and fellows comprised 40.1% of the 8700 trainees in 2017 (Table 1).<sup>2,3</sup>

The 2018 APDS membership lists contain 803 members (program directors [PDs], associate program directors [aPD], and residents and fellows). Women comprise 17% (47/275) of PDs and 33% (116/347) of the aPDs. There were 181 trainees, of whom, 39% (70) were women. Approximately 35% of all APDS members (residents, PD, and aPD) have a nonuniversity affiliation (Table 2). The APDS web directory lists 1099 participants with 549 (50%) women.

Over the 11 years studied, 75% of the leadership positions have been held by men, 90% by Caucasians, and 31% by nonuniversity surgeons. Only 1 non-Caucasian female has served in a leadership role in 11 years. Assuming an annual turnover of each position, the individual number of positions available for 11 years would be 223 (212 without president-elect officers). The total number of individuals that served in leadership positions was 51. Individuals served between 1 and 11 years, and in a range of 1 to 5 roles, with 14 individuals (10 men and 4 women) serving in  $\geq 3$  roles and 37 individuals (29 men

**TABLE 1.** AAMC 2017 Surgeon Workforce Data<sup>2,3</sup>

US Surgeons: n	Women: n (%)	Racial/Ethnic Minority: n (%)
Total active surgeons*		n/a <sup>#</sup>
25,022	5157 (20.6)	
Full-time faculty in surgery departments		
15,681	3845 (24.5) <sup>†</sup>	5240 (33.4) <sup>‡</sup>
Professors <sup>§</sup>		
3896	444 (11)	893 (22.9)
Department chairs <sup>¶</sup>		
369	17 (4.6)	78 (21)
Gen. surg. residents, and fellows <sup>  </sup>		
8700	3489 (40.1)	n/a

\*AAMC 2018 Physician Specialty Data Report, Table 1.3: Active physicians by sex and specialty, 2017. Source: AMA Physician Masterfile. Available online at <https://www.aamc.org/data/workforce/reports/492536/2018-physician-specialty-data-report.html>.

<sup>†</sup>Association of American Medical Colleges. Faculty Roster: US Medical School Faculty, 2017; <https://www.aamc.org/data/facultyroster/reports/>. Accessed January 22, 2019.

<sup>‡</sup>Faculty and department chairs with missing race/ethnicity were included as "Racial/Ethnic Minority" for the purposes of this analysis.

<sup>§</sup>AAMC 2018 Physician Specialty Data Report, Table 2.2: Number and percentage of ACGME residents and fellows by sex and specialty, 2017. Source: National GME Census in GME Track as of January 22, 2019. Available online at <https://www.aamc.org/data/workforce/reports/492536/2018-physician-specialty-data-report.html>.

<sup>#</sup>n/a, not available in data set.

and 8 women) serving for  $\geq 3$  years (Table 3). Over the last 6 years, the percentage of nonuniversity-affiliated leaders has declined (from 35% to 14%). Over the last 2 years, there has been increase in the presence of women (from 24% to 38%) and minority surgeons from (0% to 9.5%), in leadership positions (Fig. 1). In 2018, the percentage of nonuniversity-affiliated leaders (14%) was less

**TABLE 2.** APDS 2018 Membership List Demographics

	Members: n	Women: n (%)	Nonuniversity Affiliation: n (%)
Database			
PD	275	47 (17)	111 (40.5) <sup>*</sup>
APD	347	116 (33)	107 (31.2) <sup>†</sup>
Subtotal	622	163 (26)	218 (35.4)
Resident	181	70 (39)	62 (34.6) <sup>‡</sup>
Total	803	233 (29)	280 (35.2)

\*Institution missing; <sup>†</sup>institutions missing; <sup>‡</sup>institutions missing.

than half of its members (35%) while the percentage of women in leadership (38%) was higher than the percentage of women in membership (26%; Table 2 and Fig. 1).

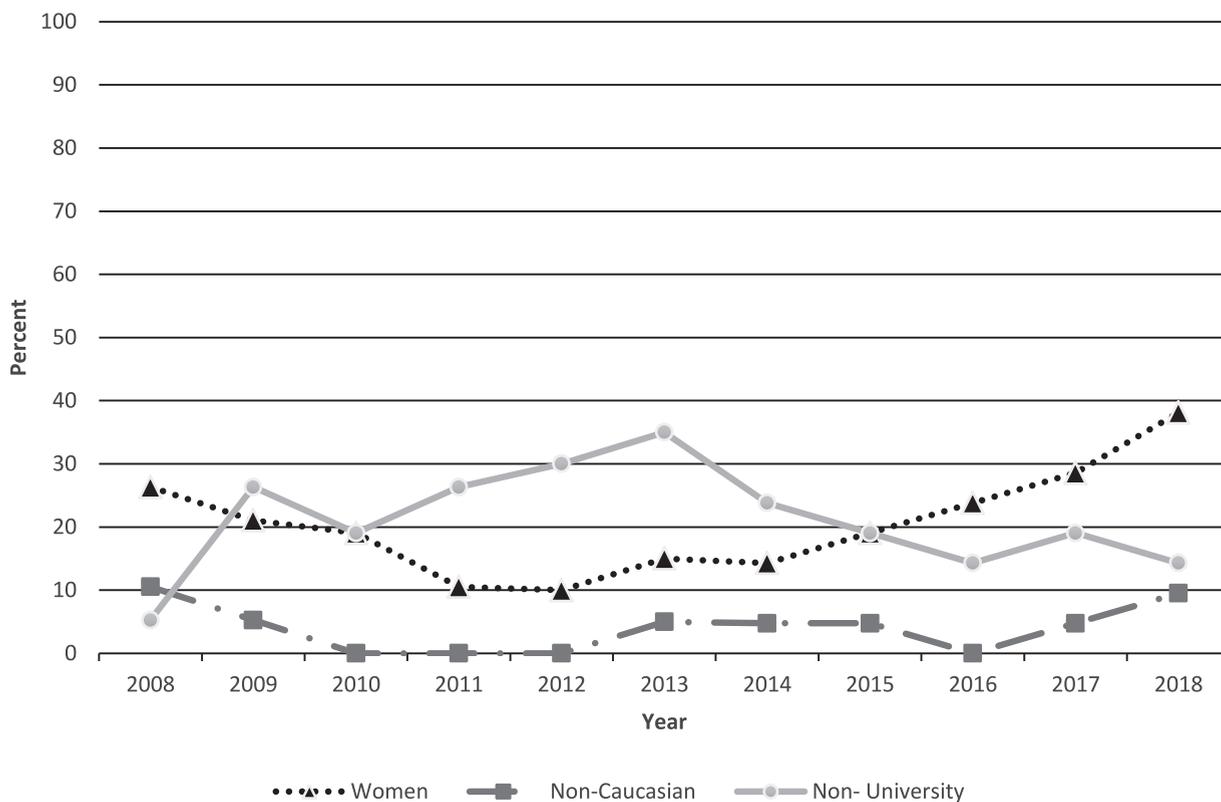
## DISCUSSION

The value of diversity, inclusion, and equity has gained increased attention in the last decade. Recent publications have evaluated the lack of parity among physicians in terms of salary and career advancement based on gender and race. Through the examination of national surgery meeting programs, several studies in 2019 have shed light on how disparities in gender and rank may affect panel speakers, awards, and publication.<sup>15-19</sup> In 2018, Earp et al. assessed the diversity among the membership and presenters over a period of 7 years of the American Society for Surgery of the Hand.<sup>20</sup> The authors noted that while representation of women and those under-represented in medicine were increasing, there was a need for greater inclusion. Our study is one of the first to longitudinally examine leadership

**TABLE 3.** APDS Leadership Demographics 2008 to 2018

Position	Individuals, n	Median Years Served/ Individual (Range)	Nonuniversity, n (%)	Women, n (%)	Non-Caucasian, n (%)
<i>APDS officer</i>					
President	11	1	1 (9)	3 (27)	0
Secretary	4	2.5 (1-5)	0	1 (25)	0
Treasurer	3	4 (3-4)	2 (67)	1 (33)	0
Program chair	11	1	2 (18)	1 (9)	1 (9)
Program vice chair*	5	1	1 (20)	1 (20)	0
<i>Committee</i>					
Board of directors (9-12 members/year)	33	3 (1-6)	11 (33)	7 (27)	2 (6)
Executive committee (3-5 members/year)	14	2 (1-3)	4 (28)	3 (21)	2 (15)
All APDS leadership positions 2008 to 2018	51	3.9 (1-11)	16 (31)	13 (25)	5 (10)
	Avg of 2 roles per individual range of 1 to 5 roles				

\*Program vice chair position started in 2014.



**FIGURE 1.** Trends in APDS leadership demographics 2008 to 2018: percentage of women, non-Caucasian, and nonuniversity affiliated members.

in a national surgery organization. This was done to determine how the APDS goals of fostering equity and inclusion and increasing diversity are reflected in leadership, and what opportunities for improvement exist.

We found that for the last decade, the number of women, minorities, and nonuniversity-affiliated surgeons in the APDS leadership is lower than their counterparts and overall 75% of positions have been held by men, 90% by Caucasians and 69% by university-affiliated surgeons. Only 51 individuals have served over 11 years. Reasons for the trends in the APDS leadership are multifactorial and this is due in part, to the longevity of the position and number of positions that individuals have held. Individuals have served for as many as 11 years and in as many as 5 roles. The current number of APDS surgeons in program leadership roles at their own institution (PDs and aPDs combined) is more than 12 times the number of individuals who have served in leadership over the last 11 years. The norm in many organizations remains a ladder of ascension, and service in multiple roles and/or many years is common and often beneficial. Our calculation of 223 positions (served by 51 individuals) over 11 years demonstrates a need for greater inclusion. While annual turnover is not representative of organizational reality, it highlights an opportunity to foster leadership development for interested members.

Moreover, numerous organizations struggle to find the balance between “continuity and corporate memory” of current leaders, vs “bringing in new blood with fresh ideas.” Although, the success of the APDS has been a result of the dedication and commitment of its leaders, the path into or within leadership positions could be better defined. With greater transparency and equity, there may be greater opportunity for the organization to harness the full potential of its membership.

Other reasons for our findings are suggested by analogous scenarios in the business and technology spheres. Some postulate that leadership turnover may stagnate because of intangible factors like imposter syndrome, the pipeline, or a lack of sponsorship.<sup>21</sup> The diversity in the pipeline of current surgical trainees is increasing at a faster pace than the workforce and those that represent them in leadership positions. The inclusion of surgeons of diverse backgrounds, gender, and training environment in positions of leaderships are important for the trainees they represent. Surgical organizations, which have parallel trends in diversity to the surgical workforce, experience similar forces that propel leaders in both political environments. The most under-represented group in our data on APDS leadership is at the intersection of gender and race: minority women. Both the AAMC data and the recent white paper on inclusion from the American Surgical Association

identify this as a vulnerable population.<sup>1-3</sup> Future investigation into the opportunities and barriers to advancement in surgery, the perceptions of surgeons, and a needs assessment of members of surgical organizations may shed more light on the disparities in surgical leadership and the means to overcome them. It is imperative to provide infrastructure and a culture in surgical departments and surgery organizations where women, minorities, and those with diverse training and practice backgrounds have an opportunity to contribute and are empowered flourish. The APDS and the DIT are committed to this endeavor for the membership and trainees in surgery. Over the last 2 years, the APDS leadership demographics are starting to evolve. There has been an increase in the representation of women and non-Caucasians in leadership. In 2018, the percentage of women in leadership was higher than that of the membership. With persistence, greater awareness, and deliberate efforts, this trajectory of greater diversity and inclusion will continue and will set the trend for similar organizations in surgery.

Our study has several limitations. AAMC databases of surgical faculty include individuals that have an appointment in a department of surgery which may include physicians who are not surgeons as well as non-physician faculty. Further, this data may not include surgeons that have academic positions in other departments. Full-time faculty data in surgery may include both general and specialty surgeons. Internet searches were conducted of leadership to identify gender and race. There is subjective assignment based on name and appearance that may contribute to some inaccuracy. Gender assignment was given in a strictly binary fashion. Data regarding other facets of diversity (age, sexual orientation, training background, etc) were not examined. The APDS membership lists are updated by the organization when an institution provides information and could be subject to error. Data on the demographics of membership over the last 11 years were not evaluated and are not publicly available and therefore comparisons of membership to leadership on an annual basis could not be made. The APDS web directory does not specify titles and likely contains a combination of PDs, aPDs, coordinators, and trainees. Further, there are no assignments of gender and binary labels were given based on the common assignment of the name to a gender. There is no uniform definition of a “university” hospital. Although the system used to classify institutions was used consistently from 1 data set to another, it is subject to bias.

## CONCLUSIONS AND FUTURE DIRECTIONS

The APDS leadership, recognizing the importance of a diverse and inclusive organization, created the DIT in 2017. The APDS has strongly supported the mission of

the DIT to address gaps in diversity at various phases of training and development from medical student to surgical leader. This ongoing collaborative effort signifies the organization’s allegiance to equity and inclusion for generations of surgeons to come. This support is evident in the strategic aims, presented at the 2019 national meeting, which embraces Inclusivity.

There is no “one-size-fits-all” solution to organizational change. The organization’s values and mission will guide its structure, initiatives, members, and leaders. In order to broaden participation in the APDS and ensure equal opportunity and representation, an evolution of the status quo is needed and has already begun. We propose consideration of the following aims:

- Identify goals and benchmarks for organizational diversity that reflect the APDS value of equity and inclusion.
- Expand opportunity with additional leadership opportunities and promote volunteerism.
- Provide transparency to selection processes of leadership.
- Gather, maintain, track, and disseminate demographics related to members, leaders, meeting registrants, and contributors.
- Foster inclusion by identifying past and present leaders willing to sponsor/mentor surgeons with diverse backgrounds in order to encourage participation, support activities, and advocate for leadership.
- Magnify and distribute educational content developed by the DIT volunteers and those with expertise in equity and inclusion.
- Maintain an enduring commitment to the evolution and the value of equity and inclusion. Lasting change takes time, deliberate action, and determination.

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