The State of Women in Academic Medicine

The Pipeline and Pathways to Leadership

2013–14

Learn
Serve
Lead

Association of American Medical Colleges
The proportion of new faculty hires who are women rose since 2008–09. The proportion of faculty departures who are women also rose.

The proportion of full-time full professors who are women has increased 7 percentage points since 2003–04 (14% to 21%).

While the number of applicants to medical school who are women continues to increase, the proportion remains under 50%.

Learn More
www.aamc.org/members/gwims/
Since 1983, the AAMC has published a national snapshot of women students, residents, faculty, and administrative leaders in academic medicine. The data have served as a reliable resource to support gender equity studies and to understand the progress of women’s representation in a variety of medical school positions.

This year, 2013–2014 The State of Women in Academic Medicine: The Pipeline and Pathways to Leadership presents the 2013–14 survey data from the Women in Medicine and Science (WIMS) Benchmarking Survey, as well as 2014 data from the AAMC Faculty Roster. Faculty Roster data are reported for medical schools in the tables that show full-time faculty and chairs by department because the WIMS Survey does not collect data at the department level. The report also supplements the discussion section with data from the AAMC Faculty Forward Engagement Survey. In combination, the data are intended to illustrate women’s representation at key junctures in their roles as learners, faculty, and leaders.

When the WIMS Survey was administered in May 2014, 129 medical schools were fully accredited by the LCME. Of those 129 schools, 117 (91%) responded.

The data indicate:

- Although the number of women applying to medical school (n=48,014) has increased since the last report, their proportion of the applicant pool (46%) has decreased
- Women make up a little more than one third (38%) of full-time academic medicine faculty
- Underrepresentation persists for full-time women associate and full professors (34% and 21% respectively) in academic medicine
- The percentage of permanent women department chairs (15%) and deans (16%) at U.S. medical schools remains low, and
- Institutional support for WIMS programs at U.S. medical schools has increased very slightly over the past five years.

Despite the modest progress, much work remains to achieve the benefits of diversity among students, faculty, and leadership. Academic medicine must remain focused on advancing the full and successful participation of women in all roles. The State of Women in Academic Medicine concludes with a new section that highlights promising approaches for advancing women faculty.
Attracting women to pursue careers in medicine and recruiting and retaining a talented and diverse faculty for academic medicine are essential to creating excellent educational, clinical, and research cultures across academic medical centers (AMCs).

Highlighting the data on women students, residents, faculty, and administrative leaders can help raise awareness and inform actions to attract and retain talented women to careers in academic medicine.

The data in this report derived from the 2014 Women in Medicine and Science Survey illustrate that women remain underrepresented at key career stages—in particular among senior faculty ranks, department chairs, and medical school deans. Scholars have used a variety of terms to describe the underrepresentation of women, such as a “leaky pipeline” or “blocked pipeline.” This report does not explain attrition rates among women faculty, or how gender-related inequities may contribute to women’s career choices in academic medicine, although some scholars have attempted to shed light on this topic.1-3 Much research is needed to describe the dynamics that contribute to women’s career decisions in this regard. These data are intended to provide additional context to research that may ultimately lead to an understanding of the pipeline through academic medicine.

Within academic medicine, medical school deans, department chairs, associate deans, and faculty and staff in a range of leadership positions have opportunities to think innovatively about transforming systems of training, discovery, and health care delivery that keep AMCs at the forefront of improving patient care and health in the United States. If women choose to leave the academic medicine workforce, their departures may contribute to a decrease in the diversity and talent of the workforce and may ultimately limit organizational success. Conversely, if AMCs can promote equity through sound institutional practices, they can increasingly retain the talented doctors, scientists, and administrators who are so vital to achieving their missions.

The data and recommendations presented in this report are designed to equip those advocating for the advancement of women at their institutions with a baseline from which to examine their own organizational practices. This information is also intended to support further scholarship on the subject of women in academic medicine to address the pipeline and pathways to leadership.

---


Methods

The Women in Medicine and Science (WIMS) Benchmarking Survey was distributed via email to the Group on Women in Medicine and Science (GWIMS) Designated Representatives and Faculty Roster Representatives at the 129 U.S. medical schools fully accredited by the Liaison Committee on Medical Education (LCME) as of May 2014.

Members had six weeks to complete the survey, and GWIMS Designated Representatives were encouraged to partner with Faculty Roster Representatives at their schools to complete the survey.

While the AAMC has collected data about women in the workforce for many years, the 2014 WIMS Survey is the third iteration of the data collection with specific questions about part-time and volunteer faculty counts and temporary leadership appointments (e.g., interim and acting appointments). The appointment classification criteria included here were provided as guidance; however, it is important to note that every medical school has its own definition of what constitutes part-time employment and continues to be an area of study when addressing part-time versus full-time issues. This report primarily features information from the WIMS Survey with non-respondent school data provided from the AAMC’s Faculty Roster. Supplemental data are used from the following AAMC resources to enhance the description of the academic medicine workplace: Faculty Roster, GME Track, Council of Deans records, and the Faculty Forward Engagement Survey.

Likewise, the following definitions were provided for guidance in reporting the appointment status of leaders:

**INTERIM:**
A temporary appointment while recruitment is underway (e.g., a chair steps down and is replaced by an interim while a new search takes place for a permanent appointee)

**ACTING:**
An appointment made with a definite endpoint (e.g., a substitute while the permanent holder is on sabbatical leave)

**FULL-TIME:**
Remunerated work and greater than 0.75 FTE (12-month contract)

**PART-TIME:**
Remunerated work but less than 0.75 FTE (12-month contract)

**VOLUNTEER:**
No remuneration, no defined FTE

117 medical schools completed the survey this year, which is a response rate of **91 percent**.
The proportion of applicants to medical school who are women has **continued to drop** since it peaked in 2003–04 at 51 percent.

**FIGURE 1**
Comparison of Women and Men Applicants, Matriculants, Graduates, and Residents in 2013–14

- **Applicants**
  - Women: 46%
  - Men: 54%
  - N = 48,014

- **Matriculants**
  - Women: 47%
  - Men: 53%
  - N = 20,055

- **Graduates**
  - Women: 48%
  - Men: 52%
  - N = 18,067

- **Residents**
  - Women: 46%
  - Men: 54%
  - N = 114,478

See Table 1 and 2 for more information.
Entering the Pipeline—Applicants, Students & Residents

**FIGURE 2**
Top 10 Specialties for Women Residents in 2013–14*

- **Internal Medicine**
  - n=23,081
  - Women: 43%
  - Men: 57%

- **Pediatrics**
  - n=12,074
  - Women: 71%
  - Men: 29%

- **Family Medicine**
  - n=10,208
  - Women: 55%
  - Men: 45%

- **Internal Medicine Subspecialties**
  - n=11,030
  - Women: 37%
  - Men: 63%

- **OBGYN**
  - n=4,884
  - Women: 83%
  - Men: 17%

- **Psychiatry**
  - n=5,965
  - Women: 55%
  - Men: 45%

- **Surgery**
  - n=7,865
  - Women: 38%
  - Men: 62%

- **Anesthesiology**
  - n=6,156
  - Women: 37%
  - Men: 63%

- **Emergency Medicine**
  - n=5,777
  - Women: 38%
  - Men: 62%

- **Pathology**
  - n=2,918
  - Women: 54%
  - Men: 46%

*The numbers in this figure show the total number of residents in each specialty. Specialties are shown in order of the highest number of women residents. The specialties above account for 85% of all women residents (n=44,596/52,521). See Table 2 for more information.
Working in the Pipeline—Faculty Workforce Numbers

**Figure 3**
Gender Distribution of Medical School Faculty

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Full-Time</td>
<td>38% Men, 62% Women</td>
<td>30% Men, 70% Women</td>
</tr>
<tr>
<td>Part-Time</td>
<td>45% Men, 55% Women</td>
<td>N/A</td>
</tr>
<tr>
<td>Volunteer</td>
<td>30% Men, 70% Women</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Research indicates that many women who take **part-time positions** do so on account of dependent children, while most men take part-time positions due to holding other professional positions.1

**Figure 4**
Full-Time Faculty Distribution by Rank and Gender in 2014

- Men make up **62%** of full-time faculty, while women make up **38%**.
- 24% Assistant Professor
- 14% Associate Professor
- 19% Assistant Professor
- 7% Associate Professor
- Full Professor 5%
- Other 4%
- Other 1%

Note: Due to rounding, percentages in this graphic do not add to 100%.

---

Amongst full-time faculty, the only rank at which women account for more faculty than men is at the instructor level.

See Table 3 for more information on Figures 5 and 6. The category "Other" in 2003–04 comprised both instructors and other educational ranks.
Working in the Pipeline—Faculty Workforce Numbers

**FIGURE 7**
Top 10 Departments with the Highest Proportion of Full-Time Faculty by Gender in 2014

1. Internal Medicine (Women: 27%)
2. Pediatrics (Women: 28%)
3. Psychiatry (Women: 29%)
4. OBGYN (Women: 16%)
5. Surgery (Women: 22%)
6. Anesthesiology (Women: 28%)
7. Radiology (Women: 27%)
8. Family Medicine (Women: 28%)
9. Pathology (Women: 28%)
10. Other Basic Science Departments (Women: 28%)
11. Neurology (Women: 29%)
12. Orthopedic Surgery (Women: 28%)
13. Other Clinical Departments (Women: 28%)

Departments above account for 81 percent of the total of women faculty (n=44,647) and 76 percent of men faculty (n=68,462). Departments are ordered by those with the highest percentage of total women faculty (e.g., 23 percent of all women faculty are in internal medicine departments).

**FIGURE 7A**
Departments with the Lowest Proportion of Full-Time Women Faculty in 2014

- **BASIC SCIENCE DEPARTMENTS**
  - Physiology: 16%
  - Biochemistry: 22%
  - Pharmacology: 29%

- **CLINICAL DEPARTMENTS**
  - Orthopedic Surgery: 16%
  - Surgery: 28%
  - Radiology: 28%

Departments are ordered by departments with the lowest proportion of women within basic science and clinical departments. See Table 3 for more information.
Working in the Pipeline—Faculty Workforce Numbers

FIGURE 8
A 5-year Comparison of Full-Time Faculty Promotions, Hires, and Departures by Gender*

The proportion of new faculty hires who are women rose since 2008–09. The proportion of faculty departures who are women also rose.

See Tables 6a and 8 for more information regarding 2013–14 data.

* The percentages shown in red are percentage point changes not increases in overall percent.
Leading in the Pipeline—Women in Leadership Positions

FIGURE 9
A 10-year Comparison of Women's Representation in Permanent Leadership Positions*

Women are continuing to make progress in obtaining administrative positions in the dean’s office, yet the percentage of **women in department-level and decanal positions remains low** compared to men.

See Tables 9a and 10a for more information. Data from 2003–04 represent an average percentage and are not based on the total percentage.

* The percentages shown in red are percentage point changes not increases in overall percent.
Leading in the Pipeline—Women in Leadership Positions

FIGURE 10 & TABLE 1
Percentage of Permanent Women Department Chairs in Academic Departments Across U.S. Medical Schools in 2014

The figure below shows the ten academic departments with the highest percentage of permanent women chairs. Table 1 shows the total number of permanent department chairs (and the % of them that are women) at U.S. medical schools as of May 2014.

![Bar chart showing the percentage of permanent women department chairs in various academic departments.]

See Table 11 for more information. Figure 10 excludes aggregate categories, such as “all other departments”.
Medical School Resources to Support Women Faculty

**FIGURE 11**
Percentage of U.S. Medical Schools Providing Professional Development Resources for Women*

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Portion of Salary Dedicated to Supporting WIMS Office and/or Activities</td>
<td>37%</td>
<td>39%</td>
<td>47%</td>
</tr>
<tr>
<td>Financial Support for Programs</td>
<td>80%</td>
<td>83%</td>
<td>84%</td>
</tr>
<tr>
<td>Dedicated Office Space</td>
<td>27%</td>
<td>37%</td>
<td>31%</td>
</tr>
<tr>
<td>In-House Coaching and Mentoring</td>
<td>70%</td>
<td>75%</td>
<td>70%</td>
</tr>
<tr>
<td>External Executive Coaching</td>
<td>29%</td>
<td>39%</td>
<td>29%</td>
</tr>
<tr>
<td>Other Resources</td>
<td>33%</td>
<td>31%</td>
<td>33%</td>
</tr>
</tbody>
</table>

See Table 12 for more information.

* The percentages in this table are based on the medical schools that responded “yes” to providing some type of support for the professional development of women (2009–10, n=112; 2011–12, n=102; 2013–14, n=105).

Schools explained that “other resources” allocated include professional development and leadership development programs for women such as the AAMC’s Early and Mid-Career Women Faculty Professional Development Seminars (EWIMS and MidWIMS) or the Executive Leadership in Academic Medicine (ELAM) program.

**FIGURE 12**
Comparison of Financial Support for Women’s Professional Development Programming

<table>
<thead>
<tr>
<th>Support Type</th>
<th>2009–10</th>
<th>2011–12</th>
<th>2013–14</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proportion of Medical Schools Providing Financial Support</td>
<td>76% (n = 90)</td>
<td>75% (n = 85)</td>
<td>75% (n = 88)</td>
</tr>
<tr>
<td>Number of Schools that Reported Total Support Amount</td>
<td>38</td>
<td>31</td>
<td>30</td>
</tr>
<tr>
<td>Average Financial Support per Medical School</td>
<td>$53,638</td>
<td>$104,802</td>
<td>$101,567</td>
</tr>
<tr>
<td>Median Financial Support Amount</td>
<td>$25,000</td>
<td>$40,000</td>
<td>$41,800</td>
</tr>
<tr>
<td>Range of Support</td>
<td>$500–$325,000</td>
<td>$2,000–$1,200,000</td>
<td>$2,300–$1,000,000</td>
</tr>
</tbody>
</table>

See Table 12 for more information.

Given the recent literature about the value of executive coaching and sponsorship, institutions may consider increasing resources for these activities.1

Data from the AAMC Faculty Forward Engagement Survey (2011–14) can help tell us what women faculty need in order to be successful. In analyzing responses by gender, significant differences in data suggest that women might benefit from:

**Clear expectations about role and the path of advancement.**
- Regular feedback on performance
- Discussions clarifying promotion requirements regarding responsibilities in teaching/education and research/scholarship
- Well-defined roles and linkage of how day-to-day activities support the school’s mission

**An equitable and diverse workplace.**
- A workplace culture that cultivates diversity
- A workplace that is seen as offering equal opportunities to all faculty regardless of gender, race, and sexual orientation
- Environments that retain female and racial/ethnic minority faculty

**Access to opportunities for development and advancement.**
- Increased availability of mentors and established mentoring programs
- Opportunities for advancement
- Professional development programming

Recommendations described here are based on analyses of Faculty Forward Engagement Survey data where significant differences in responses were observed between men and women (p<.001). The recommendations are grouped by theme and refer back to the full list of dimensions presented to the right. Asterisks indicate where significant differences between men and women respondents were observed.

---

The Faculty Forward Engagement Survey is a workplace engagement survey designed to address issues unique to faculty in academic medicine. The survey measures faculty perceptions of:

- **Nature of Work**
- **Focus on Medical School Mission**
- **Workplace Culture**
- Department Governance
- Medical School Governance
- Relationship with Supervisor
- **Mentoring and Feedback**
- **Opportunities for Professional and Career Growth**
- **Promotion Equality**
- Collegiality and Collaboration
- Compensation and Benefits
- **Faculty Recruitment and Retention**
- Clinical Practice
- Part-time Faculty Views
- Global Satisfaction

* Significant difference between men and women.
Students & Residents

While still at near-parity with men, women are currently **46 percent** of all applicants to U.S. medical schools. This proportion of applicants who are women has remained below **51 percent**, where it peaked in 2003–04.

While some suggestions have been made as to why women may not be entering medicine at the same rates, such as long hours and desire for work-life balance, the causes are unknown. A 2012 AAMC Analysis in Brief (AIB), entitled “The Changing Gender Composition of U.S. Medical School Applicants and Matriculants”, suggests that while women are earning bachelor’s degrees (including in science fields) at a higher rate, there might be factors that are keeping them from applying to medical school.1 The percentage of women residents has increased slightly since 2003–04 (41%) to 2013–14 (46%). It has remained relatively flat since 2008–09 when women were 45 percent of all residents. Further, while women increasingly are entering specialties where they have been historically underrepresented, such as surgery, large gender disparities still exist (see Figure 2). These data point to a need for focused research on individual career decisions of women students after their training. These data confirm the need for further exploration into why women are not entering medicine at higher rates.

Faculty Workforce

Similar to the findings about women entering medicine, the percentage of women in academic medicine has remained **relatively flat** over the past five years and women still are underrepresented.

While the percentage of full-time faculty who are women has increased from 30 percent to 38 percent over a 10-year period, the proportion of full-time faculty who are women has risen only 2 percentage points in the past few years, as the 2009–2010 *Women in Medicine and Science Benchmarking Report* cited 36 percent of full-time faculty were women. In looking particularly at how women are represented among higher academic ranks, the proportion of women continues to be lower when compared to male counterparts as the prestige of the position increases. For example, in 2014 women comprised 44 percent of all full-time assistant professors, 34 percent of full-time associate professors, and 21 percent of full-time full professors. Similar to women entering residency positions, full-time women faculty comprise far less of the proportion of faculty in specific departments such as surgery and radiology. Additionally, since 2008–09, the percentage of promotions to associate professor or full professor who were women has risen only slightly, and the proportion of new tenures who were woman has remained the same (30%).

Leadership Positions

Despite the slow rise in the proportion of advancements among women faculty, there has been an **increase of women in all leadership positions since 2003–04**, except that of assistant dean, which has remained around 46 percent.

The percentage of women in department chair and decanal positions rose 5 and 6 percentage points, respectively, over the past 10 years. In 2003–04, 1 in 10 department chairs or deans were women, compared with approximately 1 in 6 holding these positions in 2013–14. This increase marks progress for women in academic medicine, yet the fact that women remain underrepresented in academic medicine can be seen across all stages of the pipeline from applicant to leadership. As women progress through their careers, they are less represented in positions with decision-making and leadership responsibilities. When early career women look across academic medicine and see so few women in position of leadership, could this impact their career choices? Research is needed to explore how underrepresentation and pace of advancement for women in academic medicine may influence career choice.

---

Moving Forward

As academic medicine continues to call for expanded medical school class sizes, an increase in residency positions, and an increasingly diverse faculty workforce, the needs of women must remain part of the conversation. The small amount of progress made over the past five years suggests that leaders in academic medicine must continue to find solutions to address gender inequity and promote diversity in our institutions. We conclude this report by presenting potential recommendations about how schools may provide increased resources to help support the advancement of women and attract them to careers in academic medicine.

Five Things You Can Do Today to Advance Women

1. Become a **GWIMS Representative** (or find out who is at your school)
2. Contact and advocate for your school’s **Office of Women**
3. **Present this report** at a faculty senate or department meeting
4. Start a women’s **mentoring program**
5. **Include men** in the conversation about how to mentor and advance women

The following suggestions have been collected from literature and the experiences at academic health centers to highlight some of the ways your institution can recruit, retain, and advance women faculty:

- Provide resources to send aspiring women leaders to the AAMC Early and Mid-Career Women Faculty Professional Development Seminar. Multiply your return on investment by strategically using women faculty who attend EWIMS and MidWIMS at your institutions. Alums can conduct seminars locally to teach faculty who couldn’t attend.
- Support women faculty leaders in attending Drexel University’s Executive Leadership in Academic Medicine Program (ELAM). ELAM graduates are more likely than non-attending women faculty to obtain senior administrative roles.¹
- Provide unconscious bias sensitivity training for search committees and promotion and tenure committees and make sure there are women participants on those committees. Use standard processes for all searches that reduce bias (e.g., committing to value of specific credentials and experiences before reviewing applicants, using structured interviews, etc.).²
- Provide mentoring and coaching programs for women faculty. Train both male and female students and faculty on how to be an effective mentor across genders.³
- Don’t forget sponsorship! Women are less likely to have a sponsor, and sponsorship programs in the corporate world have been effective in advancing women.⁴
- Find out what women think about the culture and climate at your institution. What do they think most urgently needs to be addressed? The Faculty Forward Engagement Survey is one tool that can accomplish this.
- Use the **benchmarking tables** to see where your school stands in relation to others. Find out where you’re doing well and lagging behind to best target resources, but don’t stop there. Are resources including salary, administrative burden, lab space, and administrative support being distributed equitably? Take a close look at the environment at your institution.
- Support your local WIMS groups on campus and empower women to support, mentor, and sponsor each other.

Why Should You Support a WIMS Program?

Key Takeaways

The percentage of applicants to medical school who are women has continued to drop since it peaked in 2003–04.

While women residents increasingly enter specialties where they have been historically underrepresented, large gender disparities remain.

The proportion of full-time full professors who are women has increased since 2003–04, but the percentage of new tenures who are women remains unchanged since 2008–09.

Although the percentages have slowly increased over the past 10 years, women continue to hold a smaller proportion of key leadership positions (department chair, dean) than do men.

Why is this important?

“At the University of Massachusetts Medical School, we support women faculty with a comprehensive strategy that includes enabling participation in professional development opportunities (both internal and external), supporting the activities of several women’s committees, addressing structural barriers through policies (on recruitment processes), equity in compensation, and active sponsorship of women for leadership positions and awards. This strategy, strongly supported by the leadership of UMMS, has resulted in advancement of women to leadership positions where their impact as leaders, role models, and mentors benefits our organization in many ways. Specifically, women faculty lead both the education and research missions of the medical school, as well as several departments and administrative offices.”

Luanne E. Thorndyke, M.D., F.A.C.P.
Vice Provost for Faculty Affairs
University of Massachusetts Medical School

“It is critical to work to increase the number of women in leadership roles to optimize the success of academic medicine going forward. Without institutional support, this change cannot occur, and it is necessary that the present leaders in academic medicine make diversity, at all levels, a top priority. Clearly the loss of women from academic medical centers, has a negative impact on the financial status of these sites. The ability of the institution to retain its talented women faculty is critical to ensure appropriate role modeling for junior faculty, and to provide a diverse and well balanced leadership team. The academic medical center must work to increase the representation of women in leadership roles and establishment of well-funded offices of women at the varying centers is a crucial step in this process.”

Barbara Fivush, M.D.
Associate Dean for Women in Science and Pediatrics Director
Johns Hopkins University School of Medicine

“For more information:
www.aamc.org/members/gwims/