WOMEN IN MEDICINE: MAKING AN IMPACT BUILDING A FUTURE

Women’s Leadership in Women’s Health Distinguished Scholars Series

Presented by: Valerie Montgomery Rice, M.D.
President and Dean, Morehouse School of Medicine
For Decades Women Have Made Significant Contributions

Elizabeth Blackwell

Clara Barton
Founder of the Red Cross

Virginia Apgar
Developer of the Apgar Score

Nancy W. Dickey
As the first woman ever elected as president of the American Medical Association, she developed the Patient’s Bill of Rights
Gertrude Belle Elion, Chemist responsible for many lifesaving drugs, but her greatest contribution may have been Purinethol -- the first major drug used to fight leukemia.

Rosalyn Sussman Yalow, Geneticist
Her work to develop the radioimmunoassay technique made it possible to screen blood donations for infectious diseases like hepatitis.
Patricia S. Goldman-Rakic, Neuroscientist
Goldman-Rakic's contributions to the study of the brain have immensely affected views on Alzheimer’s and Parkinson’s. She was the first researcher to fully chart the frontal lobe of the brain.

Barbara McClintock
Discovered the ability of genes to change places within the chromosome ("genetic transposition") and earned a Nobel Prize for it, making her the first American woman to win an unshared prize.

Mary Claire-King
Her landmark research lay the groundwork for the discovery, in 1994, of the BRCA-1 gene.
Dr. Helen Taussig pioneered a cardiac operation that led to the development of open heart surgery and, along with Dr. Frances Kelsey, successfully prevented the FDA from approving thalidomide for morning sickness. Dr. Irene Ferrer helped develop the cardiac catheter. Dr. Marilyn Gaston’s research on sickle-cell disease led to nationwide screenings. Both the number of female physicians and their contributions have made huge advances in the past several decades, and today female doctors continue to make an important impact on the medical community.

-“Women In Medicine: How Female Doctors Have Changed The Face of Medicine” Women in Medicine Magazine, December 16, 2015
WOMEN IN MEDICINE CONTINUE TO RISE
U.S. Medical School Faculty by Sex

Count of Faculty


Click to add or remove line from report
- Male
- Female

Download Data (Excel)

Source: AAMC Faculty Roster. December 2015
U.S. Medical School Female Faculty as a Percentage of Each Rank

Click to add or remove line from report
- Professor
- Associate Professor
- Assistant Professor
- Instructor

Download Data (Excel)

Source: AAMC Faculty Roster, December 2015
GENDER BREAKDOWN BY FIELD OF STUDY FOR US SCIENTISTS AND ENGINEERS WITH PHDS EMPLOYED IN ACADEMIA

Gender Diversity Among Physician-Scientists

MD physician-scientists
• No difference in NIH RPG award rates – (2012): men 22.9%, women 23.8%
• But male applicants outnumbered female applicants ~3:1

Nurse-scientists
• Women RPG applicants outnumbered men ~9:1

Dentist-scientists
• Men outnumbered women ~3:1 in the workforce
• But women awarded almost one-third of the RPGs

Veterinarian-scientists
• 90% of current graduates are women
• But men outnumbered women ~3:1 among RPG recipients
Figure 17. K01 applicant grant outcomes, by sex

Source: Sex determined first by IMPAC II data, then supplemented with information from the DRF, then AAMC. Grant activity determined using IMPAC II.
Return on Equity\(^3\) by Women's Representation on the Board

- Companies with more WBD outperform those with the least by 53%

<table>
<thead>
<tr>
<th>Quartile WBD</th>
<th>Bottom Quartile WBD</th>
<th>Top Quartile WBD</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>9.1%</td>
<td>13.9%</td>
</tr>
</tbody>
</table>

Return on Sales\(^4\) by Women's Representation on the Board

- Companies with more WBD outperform those with the least by 42%

<table>
<thead>
<tr>
<th>Quartile WBD</th>
<th>Bottom Quartile WBD</th>
<th>Top Quartile WBD</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>9.7%</td>
<td>13.7%</td>
</tr>
</tbody>
</table>

Return on Invested Capital\(^5\) by Women's Representation on the Board

- Companies with more WBD outperform those with the least by 66%

<table>
<thead>
<tr>
<th>Quartile WBD</th>
<th>Bottom Quartile WBD</th>
<th>Top Quartile WBD</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>4.7%</td>
<td>7.7%</td>
</tr>
</tbody>
</table>

Source: Catalyst “The Bottom Line: Corporate Performance and Women's Representation on Boards”
BUT WE STILL HAVE CHALLENGES AND WORK TO DO
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.
WOMEN IN SCIENCE: MANY HURDLES AHEAD

The number of women studying and practising science has risen sharply, but women are disproportionately driven away from scientific careers.

GRADUATE SCHOOL

The fraction of women gaining doctorates in science has more than doubled in the United States since 1980 and is now nearing equity. In some European countries, women outnumber men in science degrees but there is significant variation between nations and fields.

US FEMALE DOCTORAL RECIPIENTS IN SCIENCE AND ENGINEERING

FEMALE DOCTORAL RECIPIENTS IN SCIENCE IN EUROPE (2006)

POSTGRADUATE POSITIONS

A 2009 survey of postdoctoral fellows at the University of California showed that women who had children or planned to have them were more likely to consider leaving research.

POSTDOCS WHO DECIDED AGAINST CAREERS AS RESEARCH FACULTY MEMBERS (2009)

“The plan to have children in the future, or already having them, is responsible for an enormous drop-off in the women who apply for tenure-track jobs.”

Wendy Williams, Cornell University
EARLY CAREER

Female representation among science and engineering faculty members in the United States has lagged behind gains in graduate education, in part because many women do not apply for tenure-track jobs. But women who do apply are more likely than men to receive interviews and offers.

“At least part of the lack of applications is due to the fact that women look at these careers and don’t see people like themselves.”
Hannah Valantine, Stanford University

<table>
<thead>
<tr>
<th>Field</th>
<th>Female PhDs (1999-2003)</th>
<th>Female applicants for academic jobs</th>
<th>Female interviewees for academic jobs</th>
<th>First job offers that went to women</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biology</td>
<td>45%</td>
<td>26%</td>
<td>28%</td>
<td>34%</td>
</tr>
<tr>
<td>Chemistry</td>
<td>32%</td>
<td>18%</td>
<td>25%</td>
<td>20%</td>
</tr>
<tr>
<td>Physics</td>
<td>14%</td>
<td>12%</td>
<td>19%</td>
<td>20%</td>
</tr>
</tbody>
</table>

RISING IN THE RANKS

A study of US science departments showed that women were more successful than men in gaining tenure between 2002 and 2004. In Europe as in the United States, the gender gap is greater among senior than among junior faculty members.

US TENURE DECISIONS 2002–04

- 633 applicants, 86.6% success rate

GENDER GAP AMONG SCIENTISTS IN EUROPEAN UNIVERSITIES (2006)

- 125 applicants, 92% success rate
- 64% for doctoral recipients
- 67% for junior faculty
- 89% for senior faculty

MOREHOUSE SCHOOL OF MEDICINE
THE FUNDING GAP
Women are earning an increasing share of research grants from the US National Institutes of Health (NIH) but the average size of their awards has consistently lagged behind what men receive.

2002
NUMBER OF NIH RESEARCH GRANTS
- Men: 31,801
- Women: 10,199
2002
AVERAGE SIZE OF GRANT
- Men: $403,047
- Women: $330,169
2002
Proportion going to women: 24%

2012
NUMBER OF NIH RESEARCH GRANTS
- Men: 30,768
- Women: 13,025
2012
AVERAGE SIZE OF GRANT
- Men: $507,279
- Women: $421,385
2012
Proportion going to women: 30%

THE SALARY GAP
Female scientists in the United States earn much less than men, on average, with the difference varying strongly by field.

BIOLOGY
- Men: $65,000
- Women: $50,000
2008 median salaries

CHEMISTRY
- Men: $79,000
- Women: $62,000
2008 median salaries

PHYSICS AND ASTRONOMY
- Men: $69,000
- Women: $54,000
2008 median salaries

18% AVERAGE PAY GAP ALL POSITIONS
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%
  - Total: 48,014

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

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

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

*Source: The State of Women in Academic Medicine: The Pipeline and Pathways to Leadership, 2013-2014*
Working in the Pipeline—Faculty Workforce Numbers

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

<table>
<thead>
<tr>
<th>Role</th>
<th>2013-2014</th>
<th>2003-2004</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full-Time</td>
<td>38%</td>
<td>30%</td>
</tr>
<tr>
<td>Part-Time</td>
<td>45%</td>
<td>N/A</td>
</tr>
<tr>
<td>Volunteer</td>
<td>30%</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

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**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
- 18% Full Professor
- 7% Associate Professor
- 7% Full Professor

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


Working in the Pipeline—Faculty Workforce Numbers

**FIGURE 5**
Then & Now: Full-Time Men and Women Faculty by Rank

<table>
<thead>
<tr>
<th>Rank</th>
<th>2013 - 2014</th>
<th>2003 - 2004</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full Professor</td>
<td>21%</td>
<td>14%</td>
</tr>
<tr>
<td>Associate Prof</td>
<td>34%</td>
<td>26%</td>
</tr>
<tr>
<td>Assistant Prof</td>
<td>44%</td>
<td>37%</td>
</tr>
<tr>
<td>Instructor</td>
<td>56%</td>
<td>52%</td>
</tr>
<tr>
<td>Other</td>
<td>49%</td>
<td>48%</td>
</tr>
</tbody>
</table>

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

**FIGURE 6**
Distribution of Rank Among Men and Women Across Full-Time Faculty in 2014

- Assistant Professor 50%
- Associate Professor 19%
- Full Professor 13%
- Instructor 15%
- Other 3%

32% of all full-time women faculty hold positions of full and associate professor, compared with 52% of all full-time men faculty.

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.

BUILDING A FUTURE
Consider the Facts

- The rates of premature death (death before age 75 years) from stroke and coronary heart disease were higher among non-Hispanic blacks than among whites.
- Rates for drug-induced deaths were highest among American Indian/Alaska Natives and non-Hispanic whites.
- The infant mortality rate for non-Hispanic black women was more than double that for non-Hispanic white women in both 2005 and 2008.
- In 2009, homicide rates were 263% higher among males than females and 665% higher among non-Hispanic blacks compared with non-Hispanic whites. Homicide rates for American Indian/Alaska Natives and Hispanics also far exceeded those of non-Hispanic whites.
- The motor vehicle-related death rate for men is approximately 2.5 times that for women. The motor vehicle-related death rate for American Indian/Alaska Natives is 2-5 times those for other races/ethnicities.
- Suicide rates were higher for non-Hispanic whites and American Indian/Alaska Natives compared with non-Hispanic blacks, Asian/Pacific Islanders, and persons of Hispanic ethnicity.
Disparities demand we change how we deliver care
Health Disparities and Health Equity

“The concepts of health equity and health disparity are inseparable in their practical implementation.”

-- Health Equity Institute, San Francisco State University
When is Equal (Same) Care Not Equitable?

Alrighty, boys, play fair!
Giving People What They Need, When They Need it, In the Amount They Need
DON’T FORGET TO TAKE CARE OF YOU
Burn Out is Real

SECOND OPINION

WHAT SEEMS TO BE THE PROBLEM, MRS. JOHNSON?

I FEEL THE WAY YOU LOOK!

©2012 ROBS

PHYSICIAN BURNOUT

MOREHOUSE SCHOOL OF MEDICINE
...And The Problem Is Worsening!

<table>
<thead>
<tr>
<th>Physicians Experiencing Symptoms in the Last 12 Months</th>
<th>2011</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Burnout</td>
<td>45.5%</td>
<td>54.4%</td>
</tr>
<tr>
<td>Depression</td>
<td>38.2%</td>
<td>39.8%</td>
</tr>
<tr>
<td>Suicidal Ideation</td>
<td>6.4%</td>
<td>6.4%</td>
</tr>
</tbody>
</table>


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Work-life Balance and Burn Out
[Resilience is] the glue that holds groups together, provides a purpose larger than the solitary self, and allows entire groups to rise in challenges.

Martin Seligman, PhD
Psychologist and
Author of Flourish
Our Workforce’s Resilience Is Wavering…

45.4% of physicians show symptoms of burnout in 2011


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What Are The Stressors?
Workplace Stressors

• Change
• Lack of clarity
• Perceived lack of time
• Working on too many things at one time
• Worrying about the worst case scenarios
• Lack of Control
• Physical health and relationships
Table 5. Links Between Personal and Organizational Leadership

<table>
<thead>
<tr>
<th>Personal Leadership</th>
<th>Organizational Leadership</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Who am I? Why am I alive?</strong></td>
<td><strong>Who are we? Why do we exist?</strong></td>
</tr>
<tr>
<td>Purpose and calling</td>
<td>Mission</td>
</tr>
<tr>
<td>Meaning of my work</td>
<td>Purpose</td>
</tr>
<tr>
<td><strong>Where am I today?</strong></td>
<td><strong>Where are we today?</strong></td>
</tr>
<tr>
<td>Self-assessment</td>
<td>Organizational assessment</td>
</tr>
<tr>
<td>Reflection and awareness</td>
<td>Environmental analysis</td>
</tr>
<tr>
<td><strong>Where do I want to go?</strong></td>
<td><strong>Where do we want to go?</strong></td>
</tr>
<tr>
<td>Desired future</td>
<td>Vision</td>
</tr>
<tr>
<td>Personal goals</td>
<td>Goals and objectives</td>
</tr>
<tr>
<td><strong>How do I get there?</strong></td>
<td><strong>How do we get there?</strong></td>
</tr>
<tr>
<td>Education and experience</td>
<td>Strategy</td>
</tr>
<tr>
<td>Values, morals, and ethical standards</td>
<td>Core values, guiding principles</td>
</tr>
<tr>
<td>Journey of self-development</td>
<td>Passion and commitment</td>
</tr>
</tbody>
</table>

Tips Learned

• Start the day with a relaxing ritual.
• Adopt healthy eating, exercising, and sleeping habits.
• Set boundaries.
• Nourish your creative side.
• Learn how to manage stress.
• Have at least 3 gut-wrenching laughs a day.
• Stay connected to your passions and your purpose.
“Make no little plans; they have no magic to stir men's blood and probably themselves will not be realized. Make big plans; aim high in hope and work”.

~ Daniel Burnham
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Women’s Leadership in Women’s Health
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