

# Recruitment, Retention, and Advancement of Women: A View from Medicine

NASEM Workshop

Identifying promising practices for improving the representation of  
women in science, engineering, and medicine

March 11, 2019

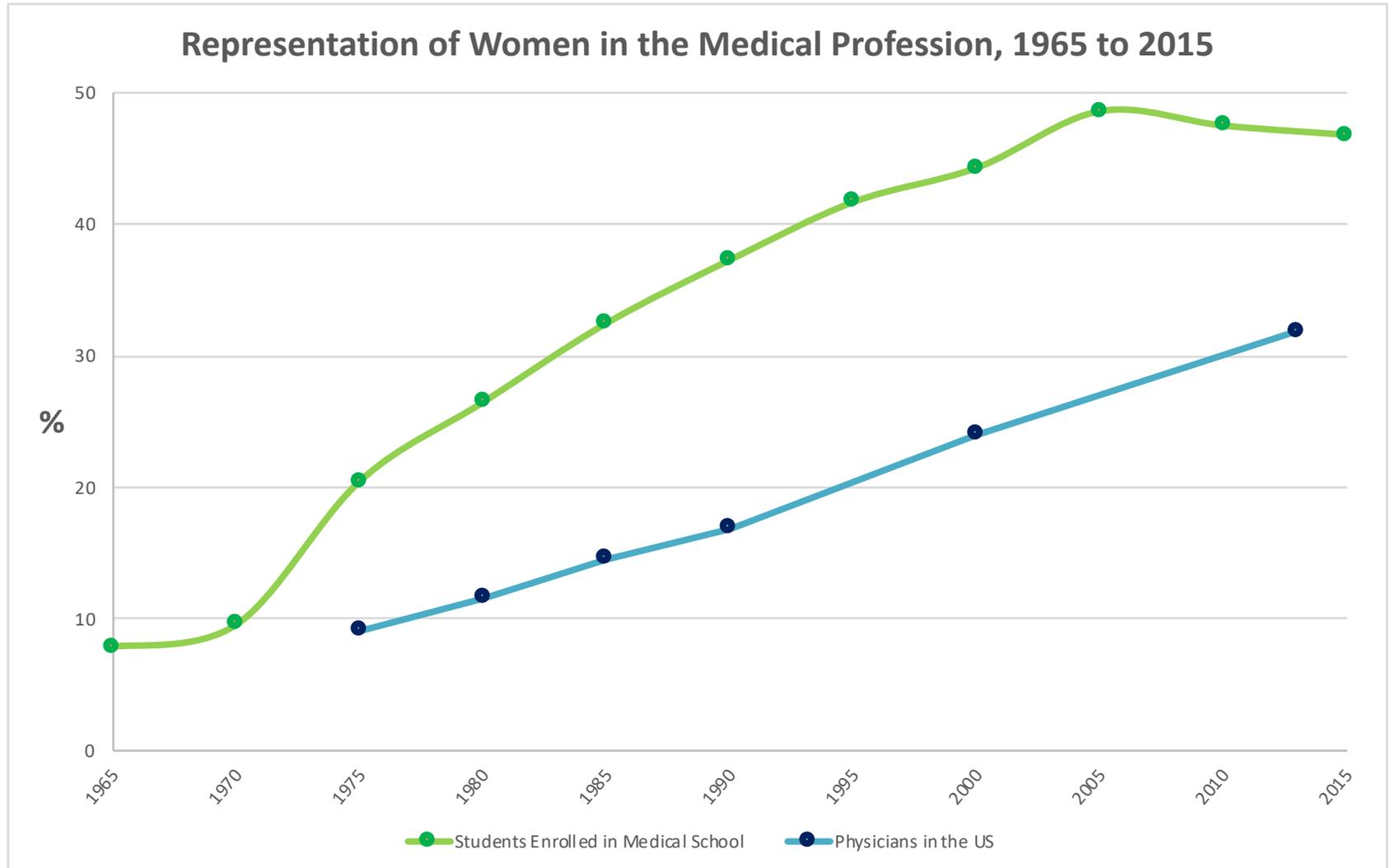
*Reshma Jagsi, MD, DPhil*

*Professor & Deputy Chair, Department of Radiation Oncology*

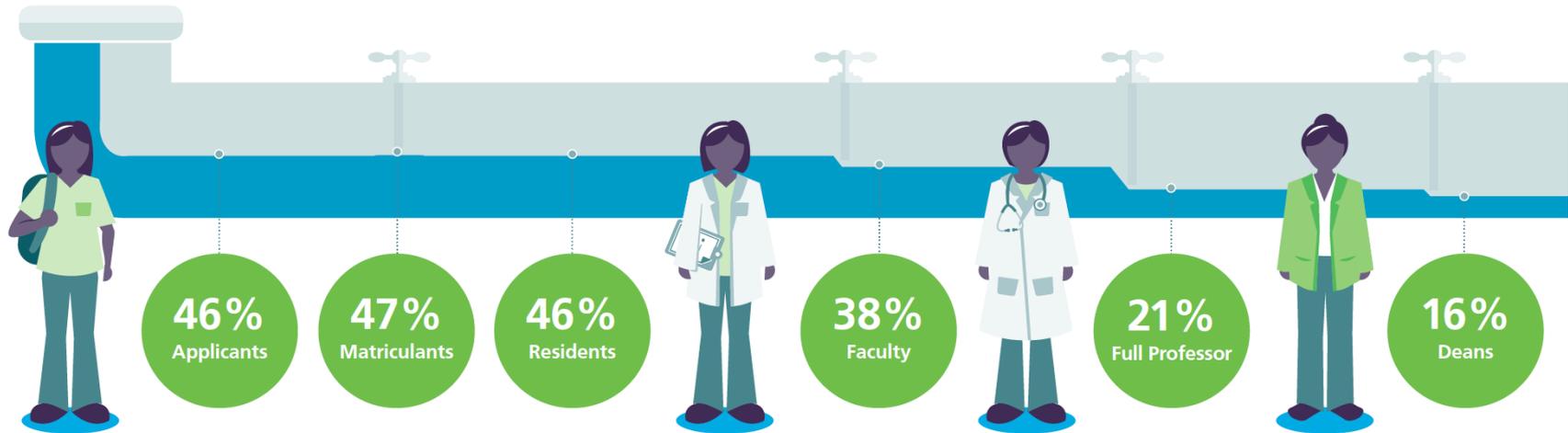
*Director, Center for Bioethics and Social Sciences in Medicine*

*University of Michigan*

# Women in the Medical Profession



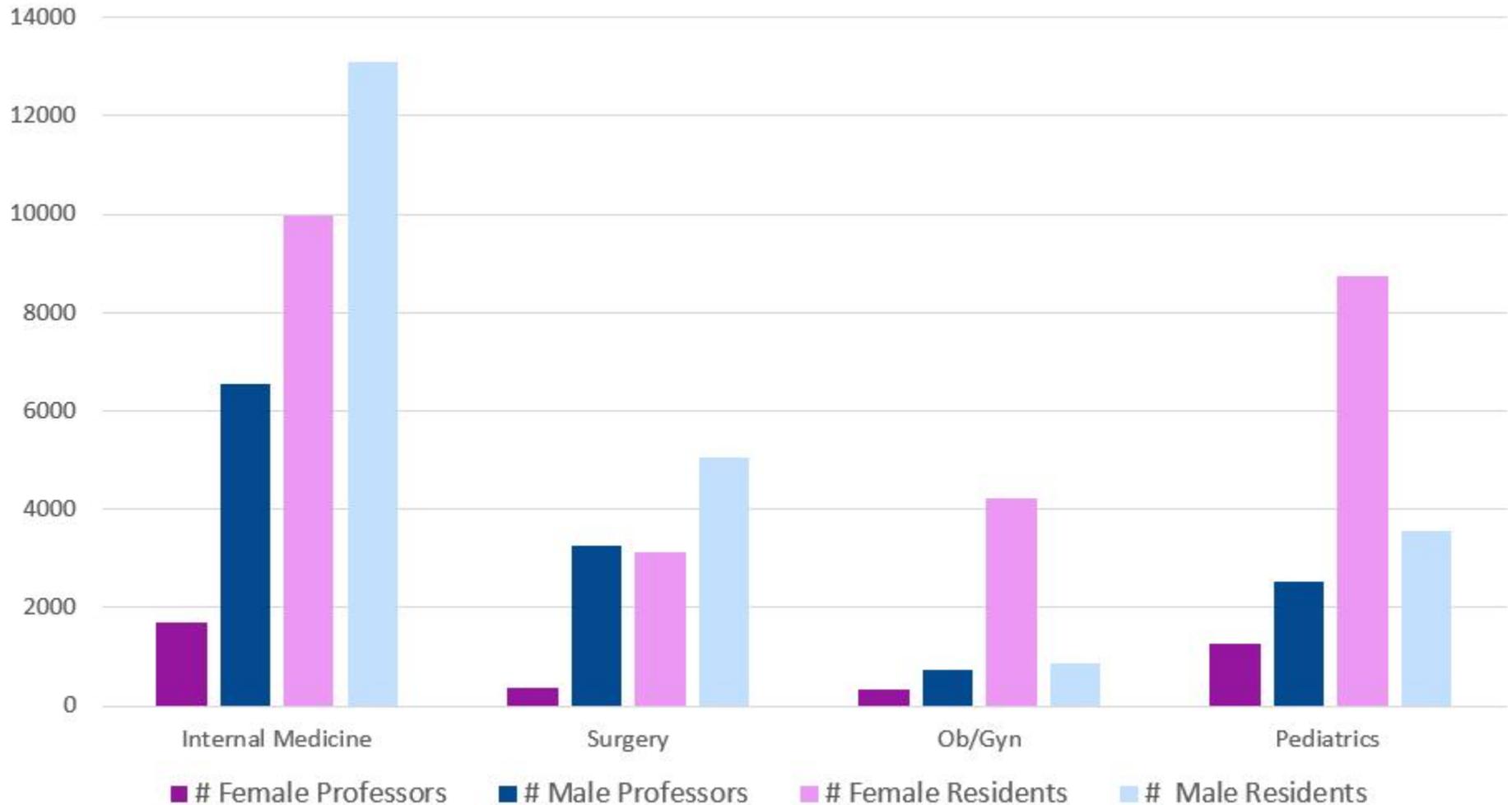
# Women in Academic Medicine



From AAMC, The State of Women in Academic Medicine: The Pipeline and Pathways to Leadership, 2013-14, Courtesy Diana Lautenberger

# Variation in Distribution By Specialty

Variation in Distribution By Specialty, 2015



SPECIAL ARTICLE

# The “Gender Gap” in Authorship of Academic Medical Literature — A 35-Year Perspective

Reshma Jagsi, M.D., D.Phil., Elizabeth A. Guancial, M.D., Cynthia Cooper Worobey, M.D., Lori E. Henault, M.P.H., Yuchiao Chang, Ph.D., Rebecca Starr, M.B.A., M.S.W., Nancy J. Tarbell, M.D., and Elaine M. Hylek, M.D., M.P.H.

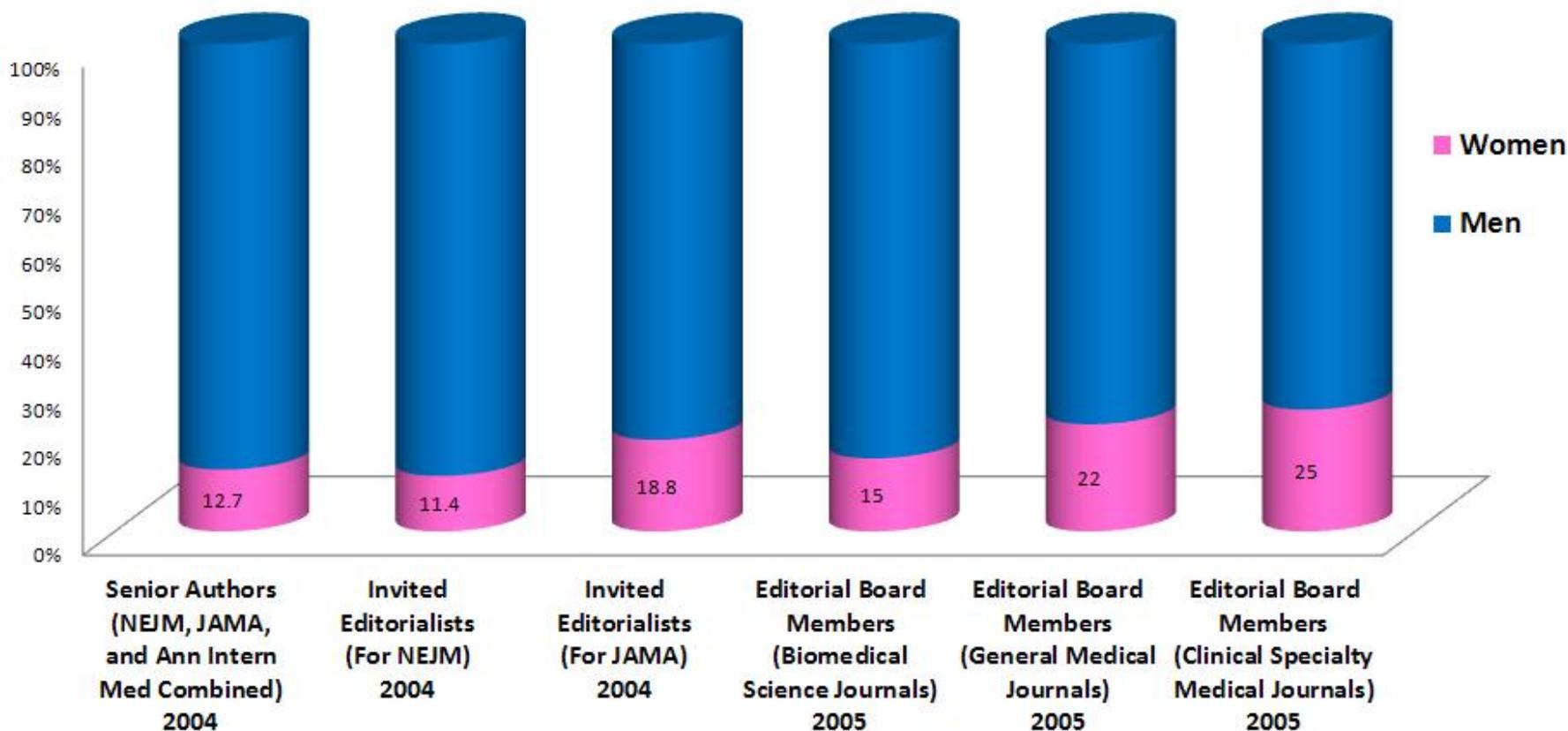
## RESEARCH LETTER

*Arch Intern Med.* 2008;168(5):544-548.

### The Representation of Women on the Editorial Boards of Major Medical Journals: A 35-Year Perspective

Reshma Jagsi, MD, DPhil  
Nancy J. Tarbell, MD

Lori E. Henault, MPH  
Yuchiao Chang, PhD  
Elaine M. Hylek, MD, MPH



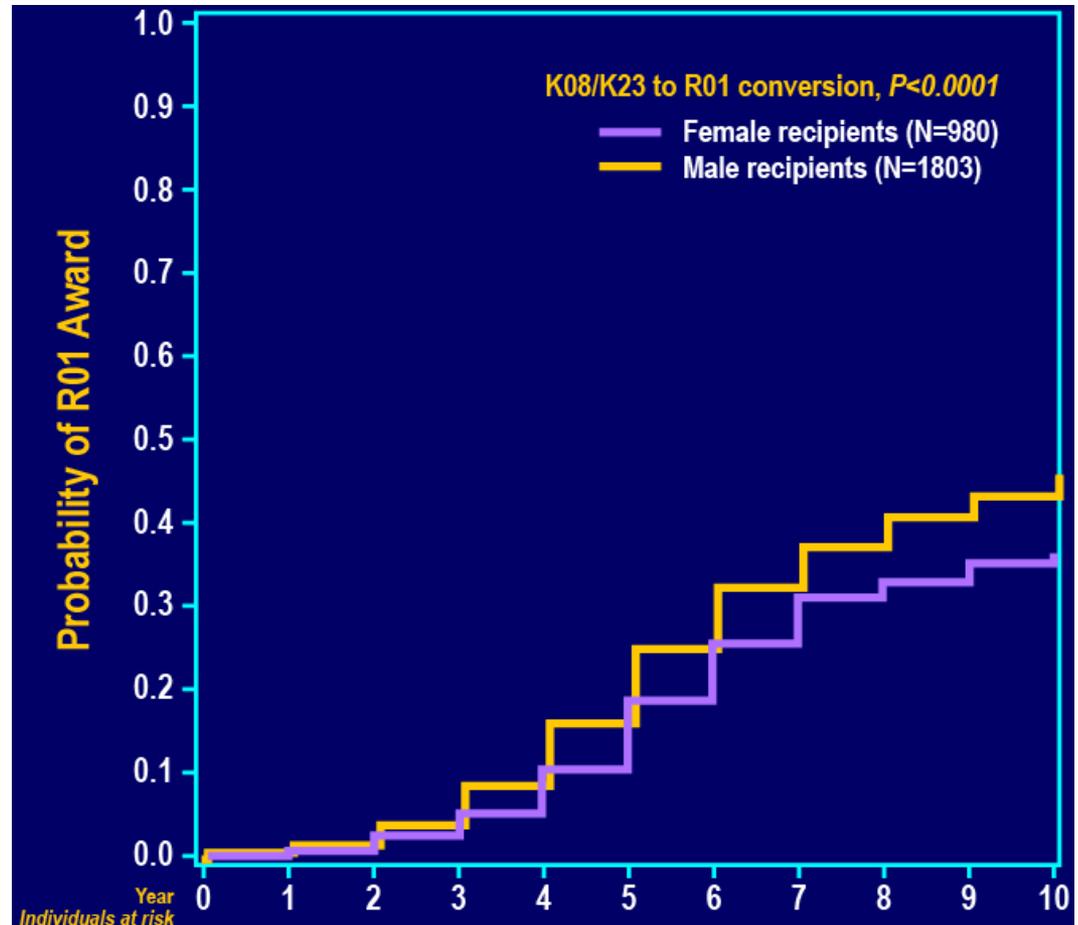
# Should we worry?

- Pipeline hypothesis
- Nonnemaker (*N Engl J Med* 2000;342:399-405)
  - 15 cohorts graduating medical school 1979-1993
  - proportion of women who advanced to associate professor significantly lower than expected in all but 2 of the 15 cohorts
  - even women who reached the rank of associate professor less likely to become full professor than male counterparts
  - criticisms
- Need for further research

## Sex Differences in Attainment of Independent Funding by Career Development Awardees

Reshma Jagsi, MD, DPhil; Amy R. Motomura, BSE; Kent A. Griffith, MS; Soumya Rangarajan, MPP; and Peter A. Ubel, MD

- 5-yr rate of R01 attainment: 19% among women and 25% among men
- Gender (HR 0.8,  $p=0.002$ ) independently significant predictor of R01 attainment on multivariable analysis controlling for K award type, year of award, funding institute, institution, and specialty



# Compensation

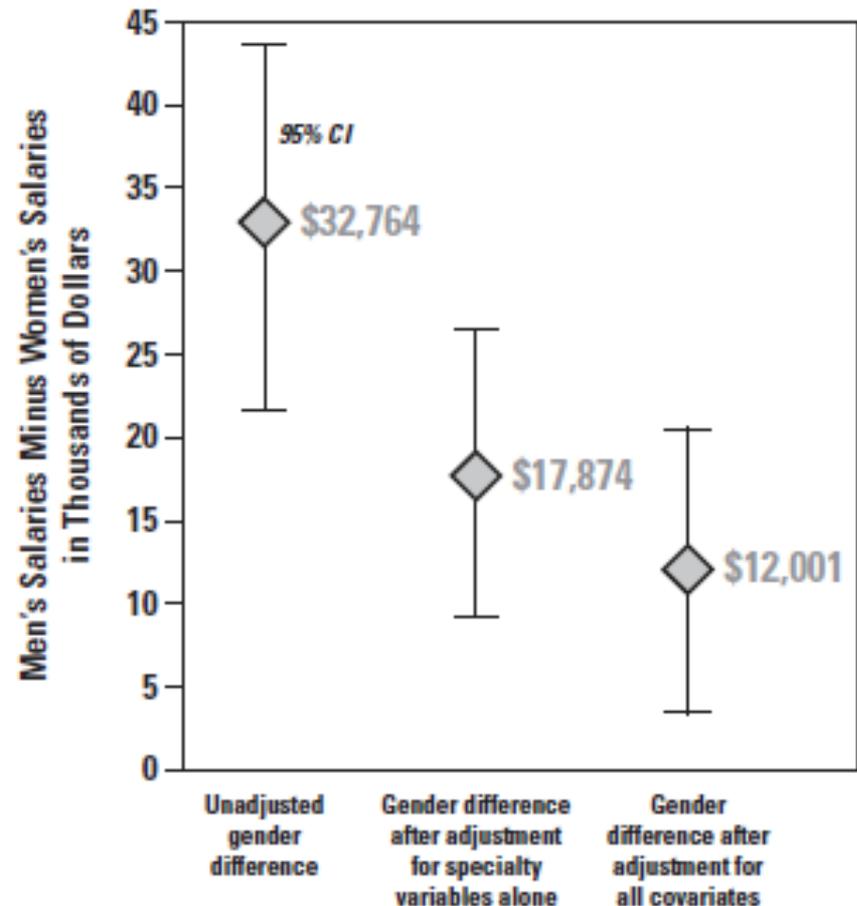
- 800 MDs who were still working at academic institutions responded to our surveys of K awardees from 2000-2003
- Significant gender difference in annual salary even after adjustment for numerous measures of success/productivity, specialization, and other factors
  - Age
  - Race
  - Marital status
  - Parental status
  - Additional doctoral degree
  - Academic rank
  - Leadership positions
  - Specialty
  - Current institution type (public/private)
  - Current institution region
  - Current institution NIH funding rank group
  - Whether changed institutions since K award
  - K award type
  - Years since K award
  - K award funding institute
  - Receipt of R01 or >\$1 million in grants
  - Publications
  - Work hours
  - Percent time in research

ORIGINAL CONTRIBUTION

**JAMA** The Journal of the  
American Medical Association

Reshma Jagsi, MD, DPhil  
Kent A. Griffith, MS  
Abigail Stewart, PhD  
Dana Sambuco, MPPA  
Rochelle DeCastro, MS  
Peter A. Ubel, MD

## Gender Differences in the Salaries of Physician Researchers



# Distinctive Features of Medicine

- Clinical mission
  - Daily interactions with patients & families in addition to colleagues, staff, & learners
  - Hierarchical culture
  - Expectations regarding work hours and availability
- Can amplify well-recognized challenges for women in STEMM more generally
  - Implicit and explicit bias
    - Jagsi R. How Deep the Bias. JAMA 2008.
  - Collision of biological and professional clocks and challenges of traditional gendered division of domestic labor
    - Jagsi, Weinstein, Tarbell. Becoming a doctor, starting a family--leaves of absence from graduate medical education. N Engl J Med 2007
    - Magudia, Bick, Cohen, Ng, Weinstein, Mangurian, Jagsi. Childbearing and Family Leave Policies for Resident Physicians at Top Training Institutions. JAMA 2018
    - Jagsi & Surender. Regulation of junior doctors' work hours: an analysis of British and American doctors' experiences and attitudes. Soc Sci Med 2002

# Consequences

- Both deontological and teleological arguments can be articulated about the need to promote gender equity
- In medicine, certain teleological arguments are highly compelling

## **Ethological observations of social behavior in the operating room**

Laura K. Jones, Bonnie Mowinski Jennings, Melinda K. Higgins, and Frans B. M. de Waal  
PNAS July 17, 2018 115 (29) 7575-7580; published ahead of print July 2, 2018 <https://doi.org/10.1073/pnas.1716883115>

JAMA Internal Medicine | [Original Investigation](#)

## **Comparison of Hospital Mortality and Readmission Rates for Medicare Patients Treated by Male vs Female Physicians**

Yusuke Tsugawa, MD, MPH, PhD; Anupam B. Jena, MD, PhD; Jose F. Figueroa, MD, MPH; E. John Orav, PhD; Daniel M. Blumenthal, MD, MBA; Ashish K. Jha, MD, MPH

PNAS

Proceedings of the  
National Academy of Sciences  
of the United States of America

## **Patient–physician gender concordance and increased mortality among female heart attack patients**

Brad N. Greenwood, Seth Carnahan, and Laura Huang

PNAS published ahead of print August 6, 2018 <https://doi.org/10.1073/pnas.1800097115>

# Interventions

- Interventions to promote recruitment, retention and advancement must address strikingly high rates of harassment in medicine

**RESEARCH LETTER** JAMA May 17, 2016 Volume 315, Number 19

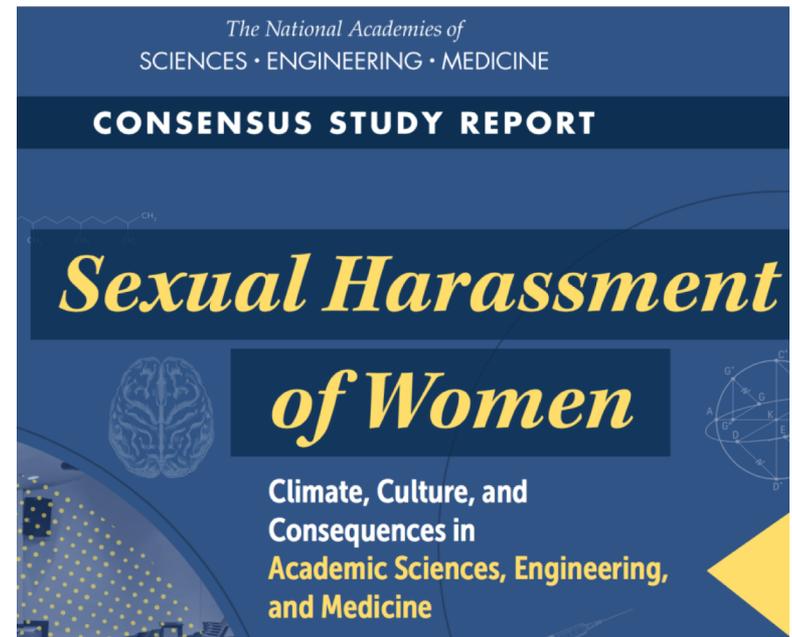
## Sexual Harassment and Discrimination Experiences of Academic Medical Faculty

Reshma Jaggi, MD, DPhil  
Kent A. Griffith, MS  
Rochelle Jones, MS  
Chithra R. Perumalswami, MD  
Peter Ubel, MD  
Abigail Stewart, PhD

**Annals of Internal Medicine**<sup>®</sup>

**What Can Medicine Learn From Social Science Studies of Sexual Harassment?**

Lilia M. Cortina, PhD; Reshma Jaggi, MD, DPhil



# Interventions

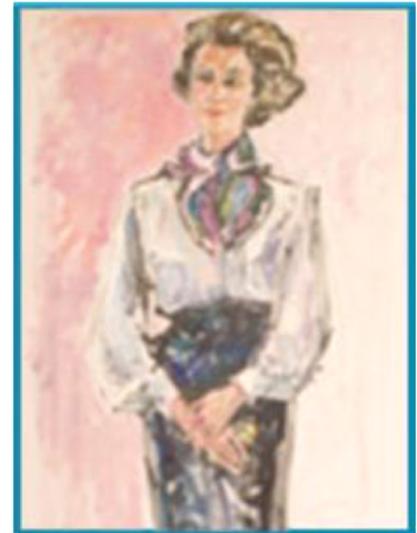
- Creative interventions to recognize service and support work-life integration

- Distinguished Scholar Awards & FRCS

- Jagsi R, Butterson J, Starr R, Tarbell NJ. A Targeted Intervention to Promote Women's Careers in Academic Medicine. *Arch Intern Med* 2007.
    - Jagsi R, Jones RD, Griffith KA, et al. An Innovative Program to Support Gender Equity and Success in Academic Medicine: Early Experiences from the Doris Duke Charitable Foundation's Fund to Retain Clinical Scientists. *Ann Intern Med*. 2018;169(2):128-130
    - Jolly S, Griffith KA, DeCastro R, Stewart A, Ubel P, Jagsi R. Gender Differences in Time Spent on Parenting and Domestic Responsibilities by High-Achieving Young Physician-Researchers. *Ann Intern Med* 2014

- Time Banking

- Fassiotto MA, Maldonado YA. A time banking system to support workplace Flexibility. <http://wellmd.stanford.edu/content/dam/sm/wellmd/documents/Time-banking-system.pdf>.



Jane D Clafin

*Clyde Smith, artist*

*MGH Archives & Special  
Collections Office*

# Interventions

- **Institutional commitment**
  - **Evidence-based implicit bias training**
    - Carnes M, Devine PG, Baier Manwell L, Byars-Winston A, Fine E, Ford CE, Forscher P, Isaac C, Kaatz A, Magua W, Palta M, Sheridan J. The effect of an intervention to break the gender bias habit for faculty at one institution: a cluster randomized, controlled trial. Acad Med 2015.
  - **Sponsorship interventions**
    - Gottlieb AS, Travis EL. Rationale and Models for Career Advancement Sponsorship in Academic Medicine: The Time Is Here; the Time Is Now. Acad Med 2018.
  - **Transparent and consistent criterion-based evaluation, promotion, compensation processes**
    - Pati S, Reum J, Conant E, Tuton LW, Scott P, Abbuhl S, Grisso JA. Tradition meets innovation: transforming academic medical culture at the University of Pennsylvania's Perelman School of Medicine. Acad Med 2013.
  - **Term limits**

# Interventions

- Creative community-building efforts can aid in recruitment and have great value to those who are “the only”
  - Shilcutt S, Silver J. Social Media and Advancement of Women Physicians. NEJM 2018.
  - Knoll MA, Jagsi R. Social Media and Gender Equity in Oncology. JAMA Oncol. 2019.



# Conclusions

- Women do not share equally in power and authority in the field of medicine
- The cause is not simply a slow pipeline: even similarly situated men and women do not appear to be rewarded similarly even today
- To recruit, retain, and advance women in medicine, evidence-based interventions must target the root causes of gender inequity in ways that appreciate commonalities with other fields as well as the distinctive features of this profession

# Acknowledgments

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