

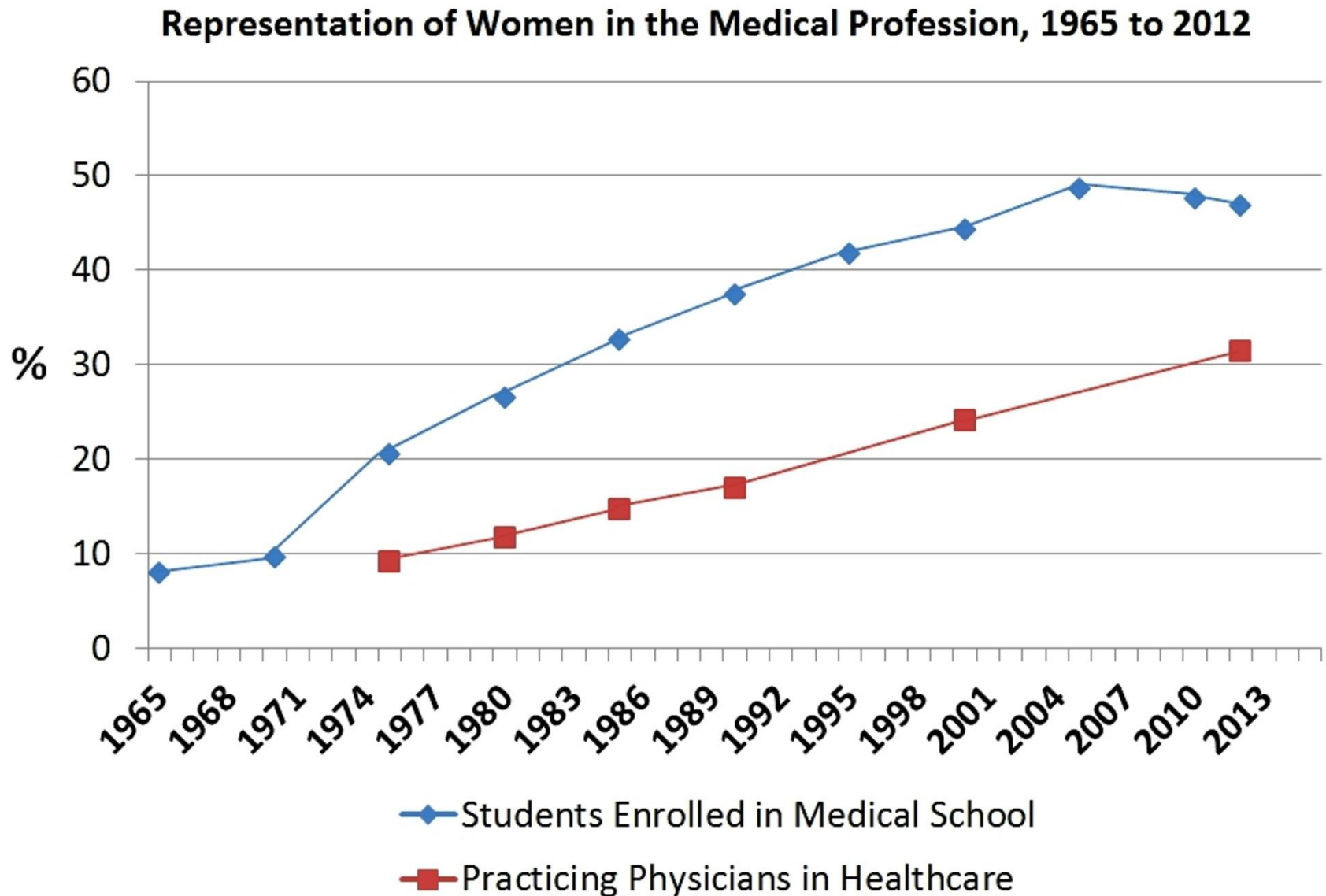
# Optimizing Mentorship to Promote Equity and Success in Academic Medicine

Reshma Jagsi, MD, DPhil  
Professor & Deputy Chair  
Department of Radiation Oncology  
University of Michigan

# Agenda

- Review evidence suggesting dysfunction in the physician-scientist pipeline, particularly for women
- Examine the nature and causes of this dysfunction in academic medicine
- Understand how mentorship can be used to promote success and target causes of inequity

# Gender Equity and the Pipeline



# Women in Leadership

- Low proportions of senior academic positions are held by women
  - In 2013-2014
    - 21% of full professors were women
    - 15% of department chairs were women
    - 16% of medical school deans were women

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.

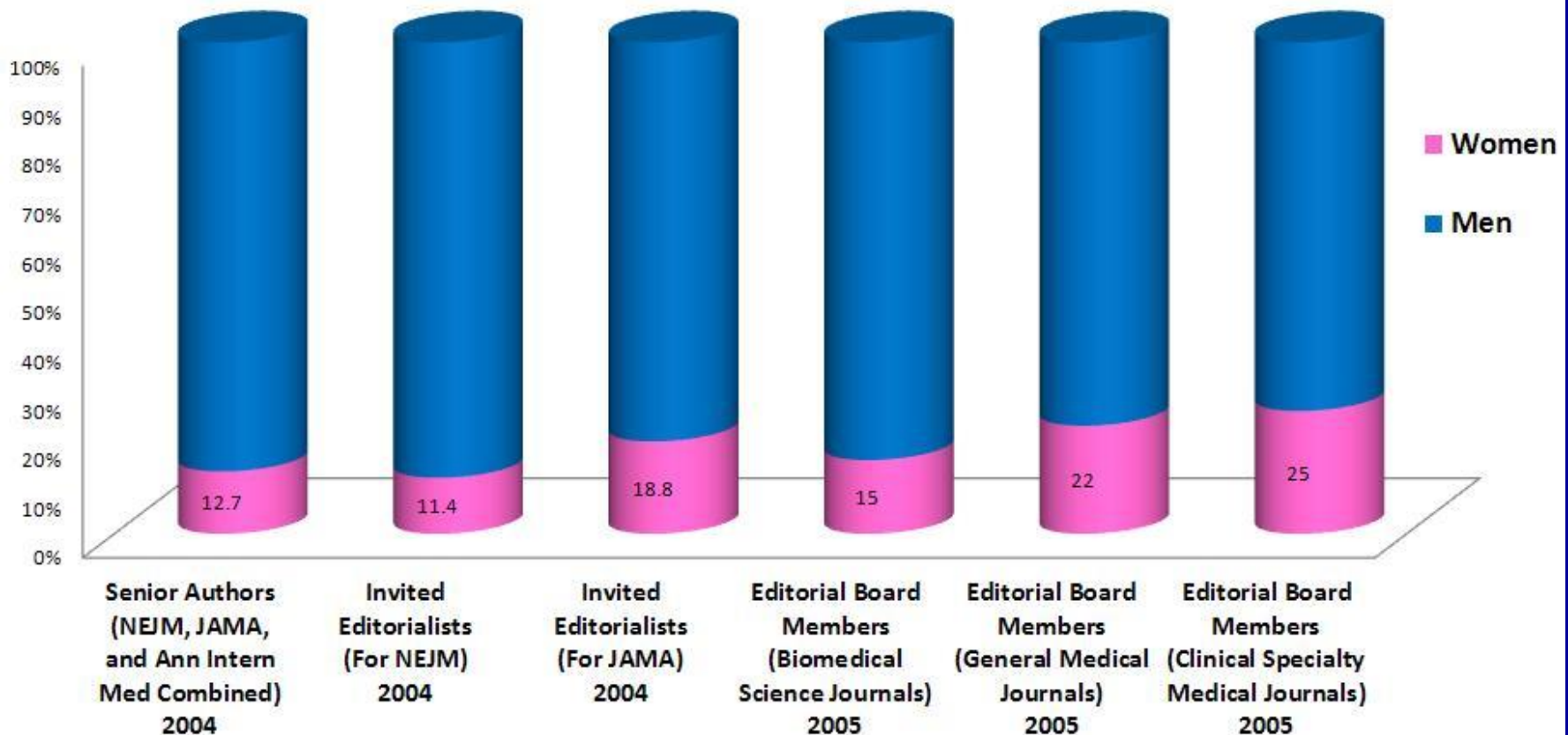
## RESEARCH LETTER

*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

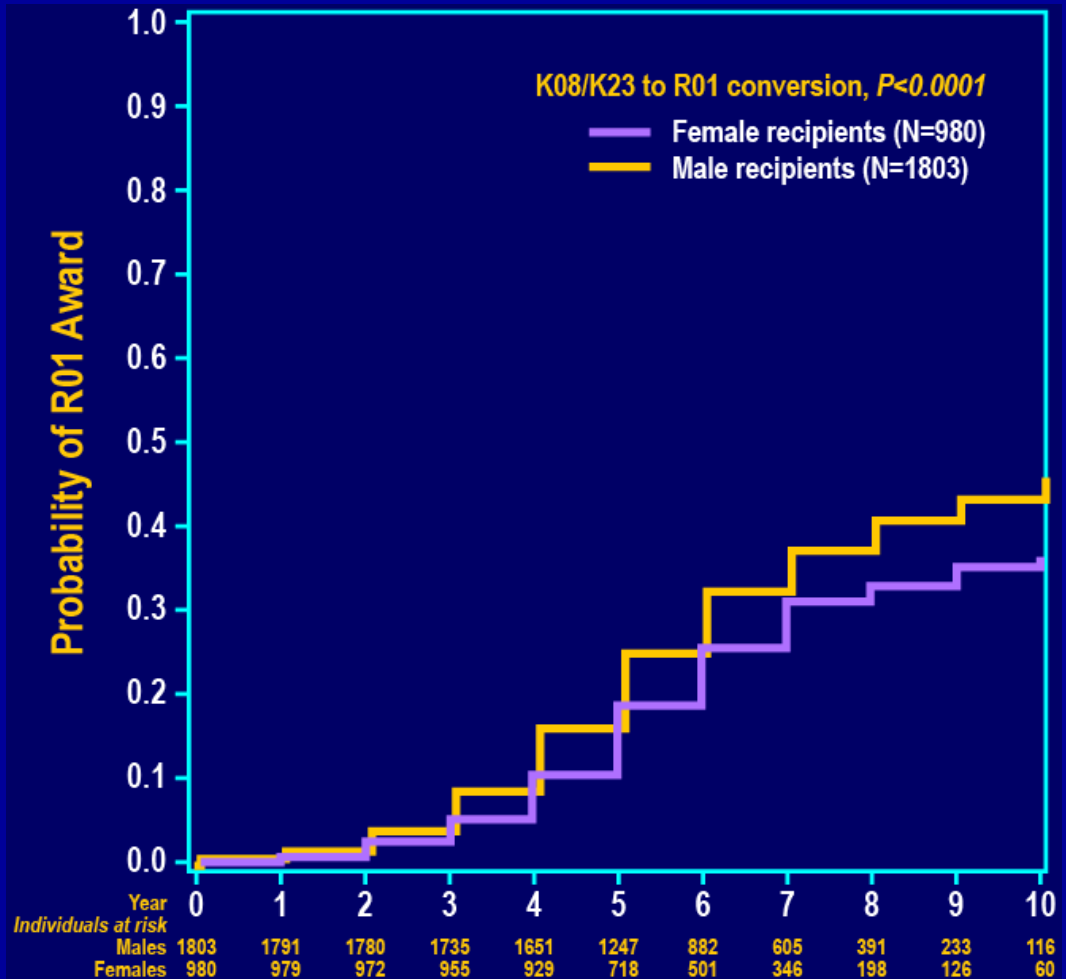
# NIH K08 and K23 Awards

- Highly competitive grants made to junior academic medical faculty
  - clinical doctorates
  - demonstrated aptitude and commitment towards research careers
- Articulated goal: to foster career development into independent investigators
- Ideal study population: homogeneous & recent cohort among whom success would be expected
- Lends insights into the mechanisms underlying observed gender differences

## 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 multivariate analysis controlling for K award type, year of award, funding institute, institution, and specialty

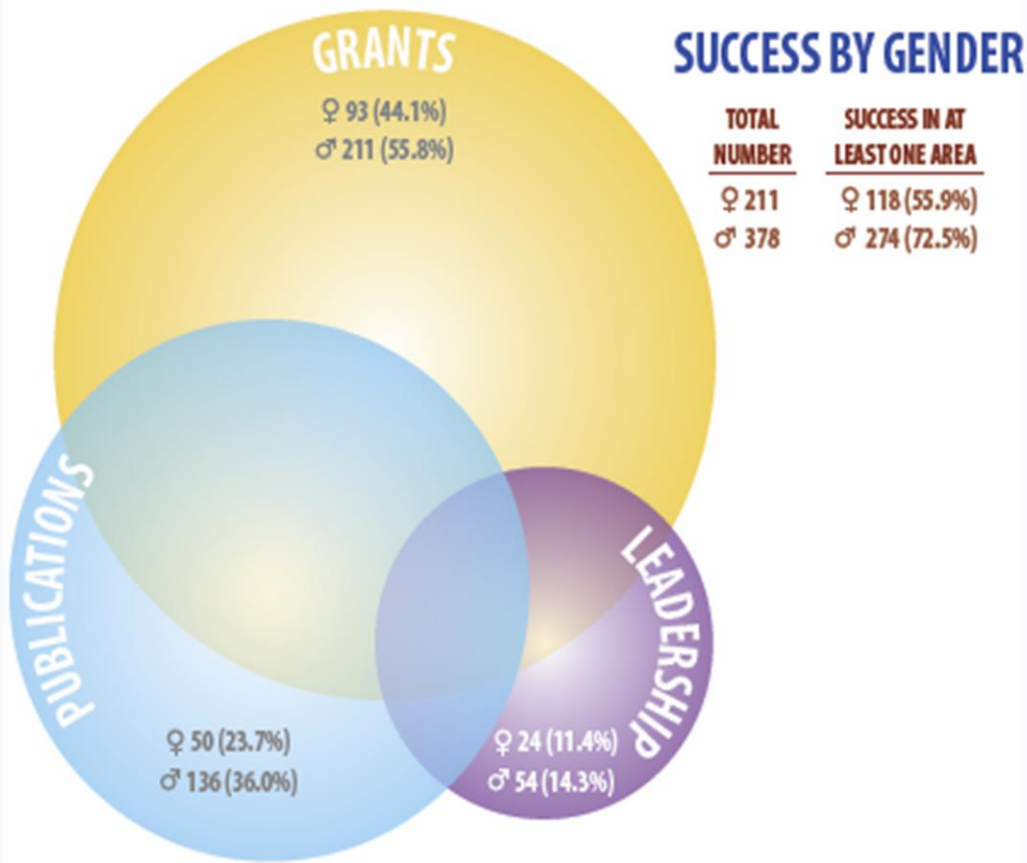




## Similarities and Differences in the Career Trajectories of Male and Female Career Development Award Recipients

Reshma Jagsi, MD, DPhil, Rochelle DeCastro, MS, Kent A. Griffith, MS, Soumya Rangarajan, MPP, Cristina Churchill, Abigail Stewart, PhD, and Peter A. Ubel, MD

Acad Med. 2011;86:1415-1421.  
First published online September 26, 2011  
doi: 10.1097/ACM.0b013e3182305aa6



# Compensation

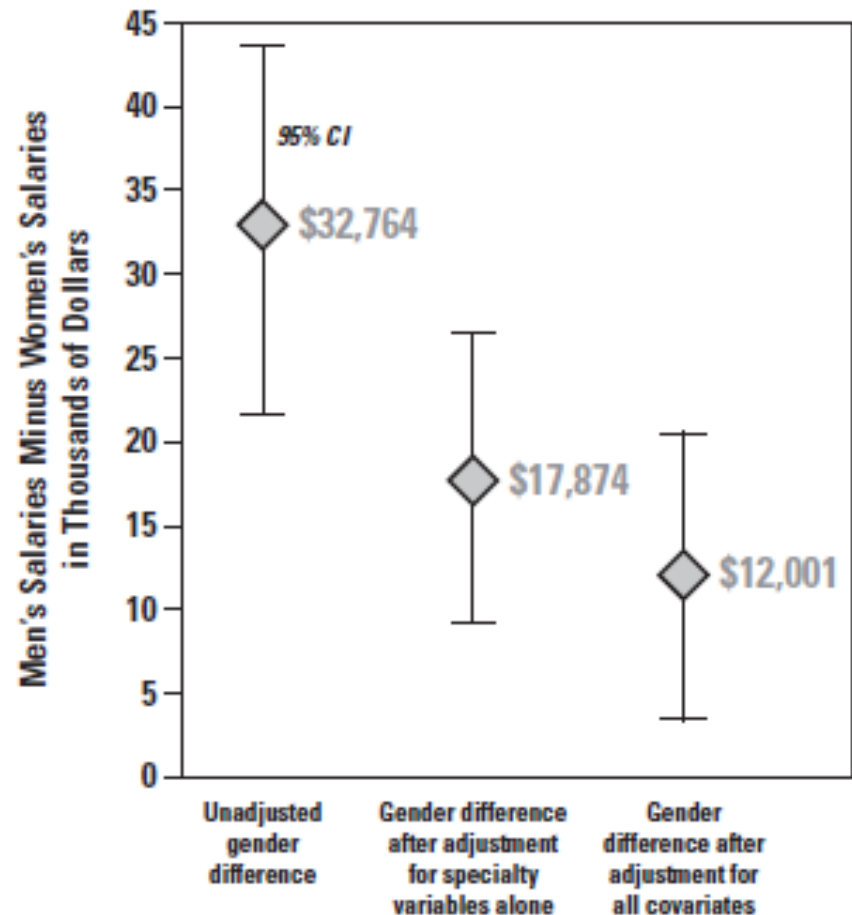
- 800 MDs who were still working at academic institutions responded to our surveys of K awardees from 2000-2003
- Significant gender difference in annual salary even after adjustment for numerous measures of success/productivity, specialization, and other factors
  - Age
  - Race
  - Marital status
  - 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



# What Drives These Differences?

- Specialty “choice”
  - Women may be encouraged to occupy lower-paid specialties, specialties chosen by women may pay less partly because they are predominated by women or involve less valued “feminine” behaviors
- Differences in productivity, hours, and “willingness” to change institutions
  - Constraints of a gender-structured society
- Differences in rank and leadership
  - May reflect biased processes for determining rewards
- But a substantial unexplained gender difference remained even after accounting for all of these factors and more

# Gender Differences in Values or Behavior?

- Perhaps mothers are more likely to sacrifice pay for unobserved job characteristics such as flexibility and fathers wish to earn more to support their families
  - Relatively homogeneous job type
  - No interaction between gender and parental status; even women without children had lower pay than men
- Perhaps women don't ask
  - Important because negotiation doesn't only impact salary but also access to all resources necessary to succeed

# Differences in Employer Behavior towards Men and Women?

- Statistical discrimination
  - employers make inferences based on the mean characteristics of a group rather than considering individual characteristics when setting salaries
- The concept of the family wage

# Unconscious Biases

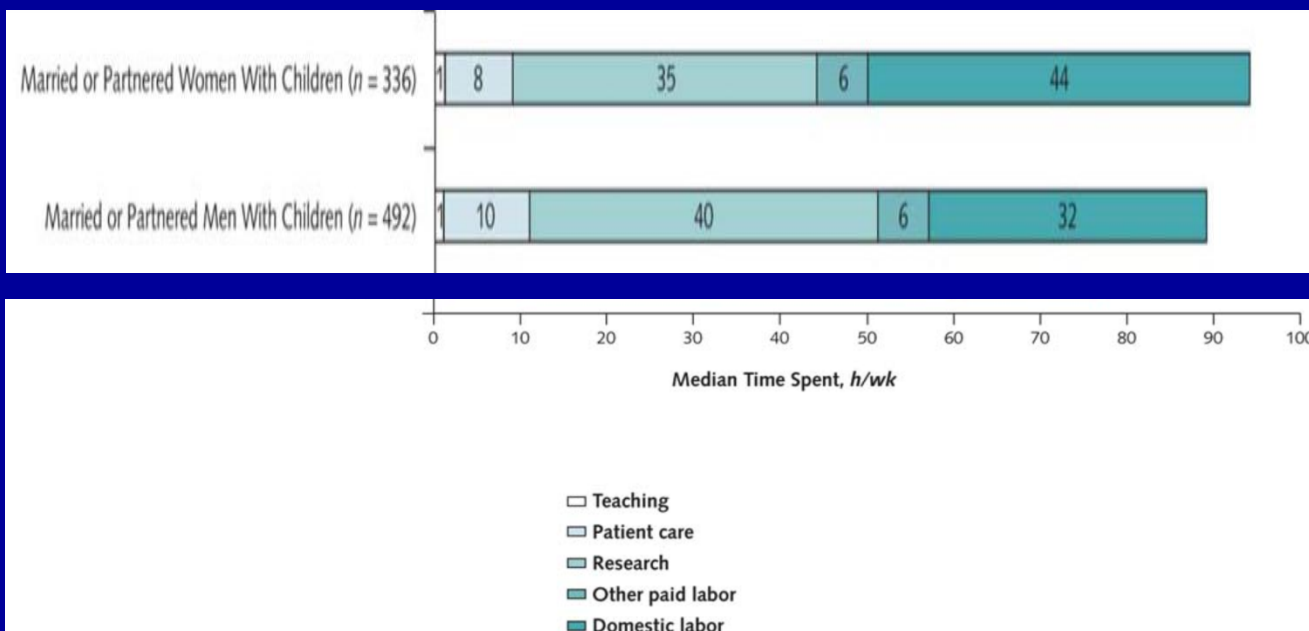
- Deeply ingrained notions of gender roles
- NAS report
  - *“An impressive body of controlled experimental studies and examination of decision-making processes in real life show that, on the average, people are less likely to hire a woman than a man with identical qualifications, are less likely to ascribe credit to a woman than to a man for identical accomplishments, and, when information is scarce, will far more often give the benefit of the doubt to a man than a woman.”*
- Qualitative studies & anecdotes

# Not a Level Playing Field

- Seemingly gender-neutral norms, practices, and policies can have a disparate negative impact upon women
  - Examples
    - Leave policies
      - Jagsi, Weinstein, Tarbell, *N Engl J Med* 2007
    - Expectations regarding work hours
      - Jagsi & Surender, *Soc Sci Med* 2002
    - Tenure clocks & limits on grant eligibility
  - Mechanisms
    - forcing collision of biological & professional clocks
    - magnifying the inequities of the traditional gendered division of labor in our society, in which many women continue to bear the greater burden of domestic responsibility

## Gender Differences in Time Spent on Parenting and Domestic Responsibilities by High-Achieving Young Physician-Researchers

Ann Intern Med. 2014;160(5):344-353. doi:10.7326/M13-0974



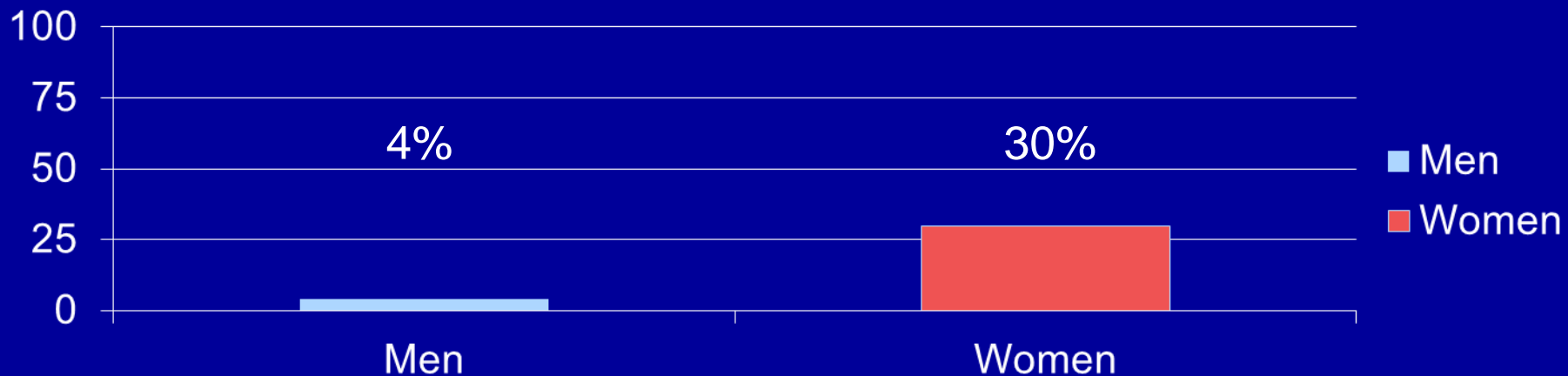
- Among married or partnered respondents with children, after adjustment for work hours, spousal employment, and other factors, women spent 8.5 more hours per week on domestic activities.
- In the subgroup with spouses or domestic partners who were employed full-time, women were more likely to take time off during disruptions of usual child care arrangements than men (42.6% vs. 12.4%).



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

## Sexual Harassment and Discrimination Experiences of Academic Medical Faculty

In your professional career, have you encountered unwanted sexual comments, attention, or advances by a superior or colleague?

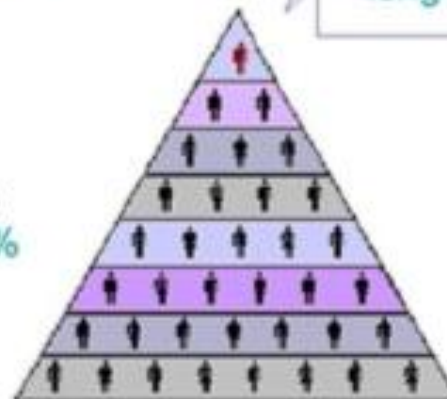


- 40% of these were more severe forms (unwanted sexual advances, subtle bribery to engage in sexual behavior, threats to engage in sexual behavior, coercive advances)
- 59% perceived a negative effect on confidence in themselves as professionals
- 47% reported that these experiences negatively affected their career advancement

# Accumulation of Disadvantage

Martell, Lane, and Emrich's (1996) model assumed a tiny bias in favor of men, which accounted for only 1% of variance in promotion.

After many iterations the top level was 65% male.



Operating at a systematic minute disadvantage can have substantial long term effects.

# What Can Be Done?

- Concrete, targeted interventions necessary
- Just as many practices contributing to gender inequity appear gender-neutral, interventions need not be obviously gender-specific either
- Mentorship programs are an attractive intervention because they can promote the success of both men and women

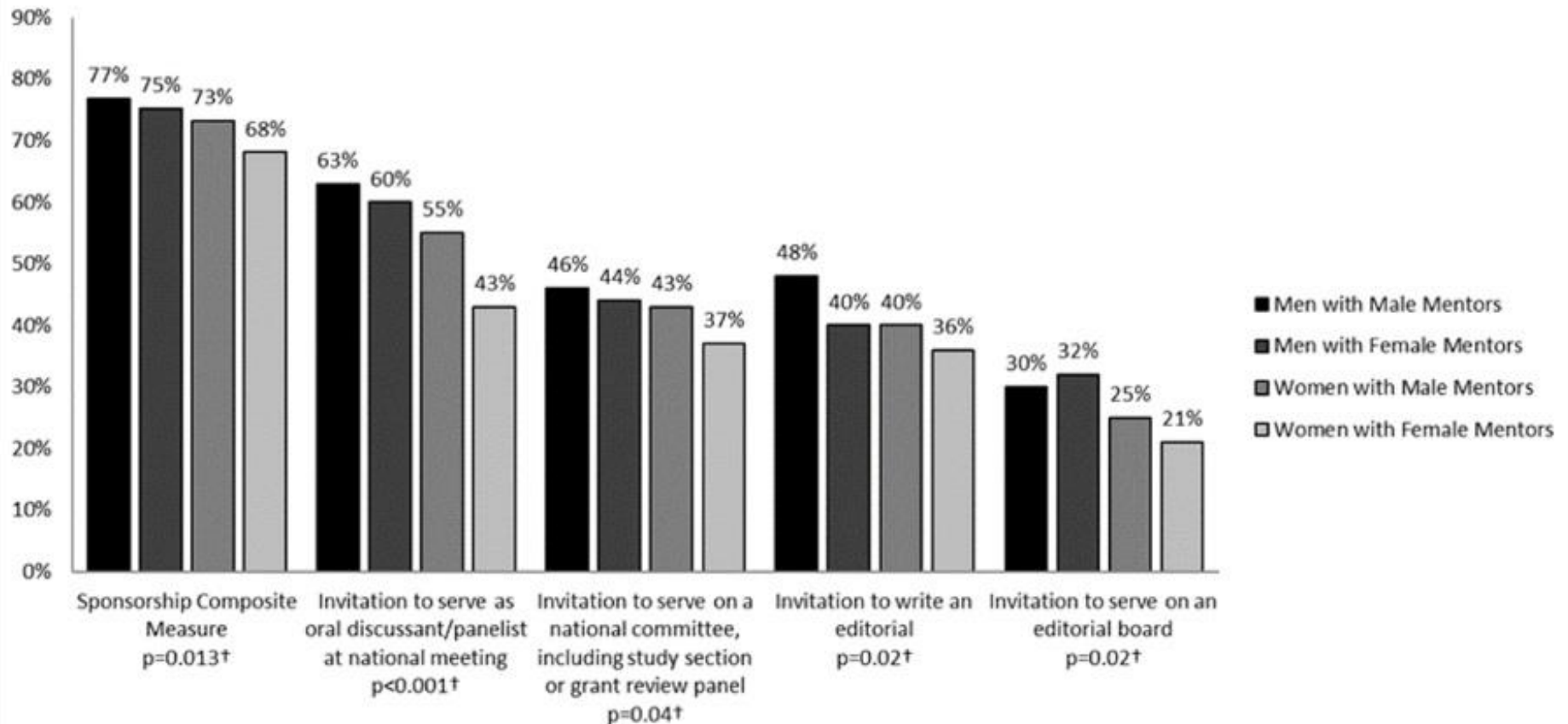
- Tracy EE, Jaggi R, Starr R, Tarbell NJ. Outcomes of a pilot faculty mentoring program. *Am J Obstet Gynecol.* 2004;191(6):1846-50.

# Optimizing Mentorship: Networks Rather than Dyads

- ❑ **Allows inclusion of mentors with varying skill sets/areas of expertise** – *“everybody knows different things” (Female, K award recipient)*
- ❑ **Personalized/comprehensive mentoring portfolio** – *“you have to figure out what you need and you have to go after it” (Female, K award recipient)*
- ❑ **Safeguards against inadequate mentoring**– *“My mentor wasn’t giving me enough ... help with the data, with the science... big picture strategy advice ... there were people [who] were around [whom] maybe I could have at least gotten that kind of advice from...” (Male, K award recipient)*
- ❑ **Includes peer mentors**– *“I have colleagues [who] are good collaborators...through those peer-level relationships, I think there’s a high degree of accountability to one another and that helps all parties involved move forward more reliably with their scientific goals” (Male, K award recipient)*
- ❑ **Facilitates inclusion of demographic matches**—*“I think it’s important for women to see other women who have been successful”— (Female, K award recipient)*
- ❑ **Allows for evolution in needs** – *“as I grew, I found the people who I might have engaged as mentors early in my career weren’t necessarily the best people to continue serving as primary mentors” (Male, K award recipient)*

# Optimizing Mentorship: Include a Sponsor

Experiences of Sponsorship by Gender



# Optimizing Mentorship: Foster Negotiation Skills

*“You have to prove yourself at some point. But once you have that, then you need to ask, because a lot of people just don't ask.... [I]f you don't ask, they're definitely going to not offer.”*  
(Female, K award recipient) Sambuco D, et al., Acad Med, 2013

## Outcomes of Negotiation, by Gender

	Females N/N <sub>total</sub> (%)	Males N/N <sub>total</sub> (%)	p values <sup>*</sup>
<i>AMONG THOSE ASKING FOR INCREASED RESEARCH SPACE OR LAB EQUIPMENT:</i>			
% partly or fully granted	101/162 (64.3)	153/223 (68.6)	0.200, 0.189
% not granted	61/162 (37.7)	70/223 (31.4)	
% currently with inadequate space or equipment	88/174 (50.6)	104/240 (43.2)	0.135, 0.177
% currently with inadequate research space	74/174 (42.5)	85/240 (35.4)	0.142, 0.276
% currently with inadequate lab equipment	46/165 (27.9)	59/232 (25.4)	0.586, 0.623
<i>AMONG THOSE ASKING FOR INCREASED FUNDING:</i>			
% partly or fully granted	102/161 (63.4)	130/199 (65.3)	0.698, 0.479
% not granted	59/161 (36.7)	69/199 (34.7)	
% currently dissatisfied with research funding	83/167 (49.7)	109/211 (51.7)	0.705, 0.904
<i>AMONG THOSE ASKING FOR DECREASED CLINICAL HOURS:</i>			
% partly or fully granted	103/133 (77.4)	90/124 (72.6)	0.368, 0.617
% not granted	30/133 (22.6)	34/124 (27.4)	
% preferring their time spent on patient care be decreased	68/137 (49.6)	69/130 (53.1)	0.833, 0.968
<i>AMONG THOSE ASKING FOR A RAISE:</i>			
% partly or fully granted	181/233 (77.7)	166/227 (73.1)	0.257, 0.290
% not granted	52/233 (22.3)	61/227 (26.9)	
% currently dissatisfied with salary	118/246 (48.0)	121/244 (49.6)	0.719, 0.632

<sup>\*</sup>p values are for the unadjusted chi-square (unadjusted comparison of gender) and for the logistic regression Wald test (adjusted comparison for race, K award type, year of K award, degree (MD, PhD, vs. MD/PhD), specialty, and K award institution tier)

# Optimizing Mentorship: Train Mentors to Promote Resilience

- ❑ **Offer moral support and encouragement** – *“[E]very mentee goes through some periods of doubt ... they recognize that lots of them aren’t going to make it in the end ... So they need a lot of encouragement.” (Male, Mentor)*
- ❑ **Promote positive thinking and adaptive mindsets** – *“When a paper is rejected I say great, it’s rejected .... it’s a bigger triumph to overcome a rejection and keep going....it just makes you stronger to overcome rejection.” (Female, Mentor)*
- ❑ **Help trainees find the right focus** – *“I think a good mentor pulls out from the mentee the path that the mentee wants to travel and then helps the mentee sort of figure out how to stay on that path and move ahead.” (Female, K award recipient)*
- ❑ **Assist with financial challenges: help obtain resources and offer advice** – *“We often have a capacity to help them solve a problem that’s making them feel like they want to quit or give up. And we can often have access to resources that might get them through the crisis. There have been times when grants didn’t come through and we could find bridge funds.” (Male, Mentor)*
- ❑ **Consider family and personal life circumstances: encourage role models in this area** – *“I’m also a mother ... it has been extremely important to have somebody who ... has shared their experiences of how they have navigated early childhood and early stages of academic medical career and really maintained success in both of those arenas. (Female, , K award recipient)*

# Parting Thoughts

- Gender equity and success in academic medicine can be promoted through optimally designed mentorship programs and other changes at the institutional level, including
  - Interventions to provide support at stages of particular vulnerability
    - Distinguished Scholar Awards, FRCS
      - Jaggi R, Butterson J, Starr R, Tarbell NJ. A Targeted Intervention to Promote Women's Careers in Academic Medicine. Arch Intern Med 2007.
  - Bias literacy and cultural transformation
    - Hopkins (Task Force), Mount Sinai (Just Desserts), Michigan (ADVANCE: recruitment, retention, climate, leadership), Wisconsin (WISELI: Bias Literacy Workshop), Penn (cultural transformation initiative)
  - Development of transparent & consistent criteria for advancement & compensation



# Acknowledgments

## Collaborators

- Nancy Tarbell, MD
- Peter Ubel, MD
- Abigail Stewart, PhD
- Sherrie Kaplan, PhD
- Kent Griffith, MS
- Rochelle DeCastro Jones, MS
- Dana Sambuco, MA
- Natalie Clark, MD
- Emma Holliday, MD
- Chithra Perumalswami, MD
- Elizabeth Patton, MD
- Shruti Jolly, MD
- Pamela Douglas, MD
- Kyoko Nomura, MD
- Amy Motomura, BSE
- Soumya Rangarajan, MPP
- Deb Weinstein, MD
- Rebecca Surender, DPhil
- Elaine Hylek, MD
- Rebecca Starr, MSW, MBA
- Elizabeth Guancial, MD
- Cynthia Cooper, MD
- Lori Henault, MPH
- Yuchiaio Chang, PhD
- AAMC GWIMS

## Funders

- National Institutes of Health
- Robert Wood Johnson Foundation
- American Medical Association
- The Doris Duke Charitable Foundation
- University of Michigan IRWG & OVPR
- Burroughs-Wellcome Fund/  
Alliance for Academic Internal Medicine

