

Annotated Bibliography of Recent Studies of Academic Gender Bias and Gender Discrimination

***Please add new titles and annotations. Article title, citation, abstract. Title/citation listed as heading 1 and highlighted.***

**2024: Managing Gender Inequity in Academia: A Guide for Faculty and Administrators in Public Affairs Programs (book) ISBN: 9781032280714.**

**Routledge: Taylor & Francis.**

Gina Scutelnicu Todoran

<https://www.taylorfrancis.com/books/mono/10.4324/9781003295204/managing-gender-in-equity-academia-gina-scutelnicu-todoran>

Preview of the book:

<https://books.google.com/books?hl=en&lr=&id=fDT3EAAQBAJ&oi=fnd&pg=PT8&ots=Yx5QgdDJRK&sig=YoLJObG-EVI8SlkpaXnm5hZHDHw#v=onepage&q&f=false>

Academia is not immune to gender bias, and in many public affairs programs, inequities persist in faculty academic rank, salary, career length, job security, leadership roles, professional recognition, resource allocation, and role stereotypes. Managing Gender Inequity in Academia is the first book to provide an evidence-based guide for university administrators and faculty interested in building all-important gender equity in public affairs and related programs. Drawing on both secondary and primary data, the book offers a comprehensive perspective on public affairs faculty career paths, the obstacles to advancement in the academy, and how the COVID-19 pandemic further contributed to existing inequities.

Each chapter of the book presents evidence-based research derived from interviews, surveys, existing statistics, and documents, offering guidance to public affairs programs, departments, and schools on ways to strengthen the recruitment, retention, and promotion of women in the academy. Ultimately, author Gina Scutelnicu Todoran demonstrates the ways in which gender equity can strengthen institutions of higher learning. Managing Gender Inequity in Academia is a guide for building gender equity in public affairs programs for faculty, higher education administrators, and graduate students in public affairs and related disciplines.

## ***2023: The contribution of formal and informal mentorship to faculty productivity: Views of faculty in public affairs programs***

Gina Scutelnicu Todoran

Journal of Public Affairs Education (open access):

<https://www.tandfonline.com/doi/full/10.1080/15236803.2023.2220096>

This study examines how mentorship opportunities contribute to the productivity and career growth of public affairs faculty, stratified by gender and race. The study uses primary data coming from an original survey administered at two different points in time (2017 and 2021) to faculty who are part of NASPAA member schools. Results indicate that women and faculty from racially under-represented groups are more likely to receive formal mentoring whereas men and white faculty are more likely to benefit from informal mentoring. Additionally, results show that the relationship between mentoring approaches and research effort differed by the faculty's member gender and race with formal mentoring contributing to the research effort of men and white faculty across all academic ranks and university types, and informal mentoring contributing to the research effort of mid-career faculty of all genders and races. This study aims to inform individuals and universities about mentoring trends and contributions.

## **What are we reading? Hot topics and authorship in ecology literature across decades.**

Meredith A. Zettemoyer, Karina M. Cortijo-Robles, Nicholas Srodes, Sarah E. Johnson  
ESA Bulletin 104(1) e02025 <https://doi.org/10.1002/bes2.2025>

As the field of ecology evolves, analyses synthesizing trends in key topics addressed over the decades can provide historical context for the development of novel theories and methods, identify “hot topics” over time, and guide future research directions. Such syntheses in a field that aims to diversify can also help quantify efforts to increase representation and authorship by underrepresented groups in STEM. To identify hot topics in ecology, we analyzed key themes in the top-cited ecology papers in three two-decade timeframes spanning 1960–2019. We also analyzed authorship trends (gender identity and nationality) in the top-cited papers. We documented a shift from descriptive studies in single biological systems in the 1960–1970, to more synthesis-based papers and studies discussing human impacts on the environment in the 1980–1990, while the 2000s were dominated by novel quantitative and macroecological approaches. The top-cited papers were overwhelmingly from the United States and Europe, highlighting the need to make studies from across the globe more visible and accessible in the ecological literature. Finally, we detected a trend for more papers led by women authors, but a decline in papers with women last authors, indicating a need to retain women in leadership positions. Overall, our hot topics analysis highlights the expanding breadth and quantitative nature of ecology, but illustrates barriers to diversity in the perspectives represented in the top-cited papers.

## 2023: Analysis of the same cohort of NIH K99/R00 Awards and the Career Progression of Awardees

Nicole C Woitowich, Sarah R Hengel, Tauras P Vilgalys, Joël Babdor, Danieul J Tyrrell

BioRxiv - <https://doi.org/10.1101/2023.01.26.525751>

Many postdoctoral fellows and scholars who hope to secure tenure-track faculty positions in the United States apply to the National Institutes of Health (NIH) for a Pathway to Independence Award. This award has two phases (K99 and R00) and provides funding for up to five years. Using NIH data for the period 2006-2022, we report that ~230 K99 awards were made every year, ~40% of K99 awardees were women, and that ~85% of K99 awardees went on to receive an R00 award. Institutions with the most NIH funding produced the most recipients of K99 awards and recruited the most recipients of R00 awards. The time between a researcher starting an R00 award and receiving a major NIH award (such as an R01) it to me to come by or at their home institution, and for those hired by an institution that was not one of the 25 institutions with the most NIH funding. Shockingly, there has yet to be a K99 awardee at a historically Black college or university. We go on to show how K99 awardees flow to faculty positions, and to identify various factors that influence the future success of individual researchers and, therefore, also influence the composition of biomedical faculty at universities in the US.

## 2022 Women are credited less in science than men

Matthew B. Ross, Britta M. Glennon, Raviv Murciano-Goroff, Enrico G. Berkes, Bruce A. Weinberg & Julia I. Lane

Nature. volume 608, pages135–145 (2022)

There is a well-documented gap between the observed number of works produced by women and by men in science, with clear consequences for the retention and promotion of women<sup>1</sup>. The gap might be a result of productivity differences<sup>2,3,4,5</sup>, or it might be owing to women's contributions not being acknowledged<sup>6,7</sup>. Here we find that at least part of this gap is the result of unacknowledged contributions: women in research teams are significantly less likely than men to be credited with authorship. The findings are consistent across three very different sources of data. Analysis of the first source—large-scale administrative data on research teams, team scientific output and attribution of credit—show that women are significantly less likely to be named on a given article or patent produced by their team relative to their male peers. The gender gap in attribution is present across most scientific fields and almost all career stages. The second source—an extensive survey of authors—similarly shows that women's scientific contributions are systematically less likely to be recognized. The third source—qualitative responses—suggests that the reason that women are less likely to be credited is because their work is often not known, is not appreciated or is ignored. At least some of the

observed gender gap in scientific output may be owing not to differences in scientific contribution, but rather to differences in attribution.

## 2022 Challenging the “old boys club” in academia: Gender and geographic representation in editorial boards of journals publishing in environmental sciences and public health

Dada S, van Daalen KR, Barrios-Ruiz A, Wu K-T, Desjardins A, Bryce-Alberti M, et al. (2022) Challenging the “old boys club” in academia: Gender and geographic representation in editorial boards of journals publishing in environmental sciences and public health. PLOS Glob Public Health 2(6): e0000541. <https://doi.org/10.1371/journal.pgph.0000541>

### *Abstract*

In light of global environmental crises and the need for sustainable development, the fields of public health and environmental sciences have become increasingly interrelated. Both fields require interdisciplinary thinking and global solutions, which is largely directed by scientific progress documented in peer-reviewed journals. Journal editors play a critical role in coordinating and shaping what is accepted as scientific knowledge. Previous research has demonstrated a lack of diversity in the gender and geographic representation of editors across scientific disciplines. This study aimed to explore the diversity of journal editorial boards publishing in environmental science and public health. The Clarivate Journal Citation Reports database was used to identify journals classified as Public, Environmental, and Occupational (PEO) Health, Environmental Studies, or Environmental Sciences. Current EB members were identified from each journal’s publicly available website between 1 March and 31 May 2021. Individuals’ names, editorial board roles, institutional affiliations, geographic locations (city, country), and inferred gender were collected. Binomial 95% confidence intervals were calculated for the proportions of interest. Pearson correlations with false discovery rate adjustment were used to assess the correlation between journal-based indicators and editorial board characteristics. Linear regression and logistic regression models were fitted to further assess the relationship between gender presence, low- and middle-income country (LMIC) presence and several journal and editor-based indicators. After identifying 628 unique journals and excluding discontinued or unavailable journals, 615 journal editorial boards were included.

In-depth analysis was conducted on 591 journals with complete gender and geographic data for their 27,772 editors. Overall, the majority of editors were men (65.9%), followed by women (32.9%) and non-binary/other gender minorities (0.05%). 75.5% journal editorial boards (n = 446) were composed of a majority of men (>55% men), whilst only 13.2% (n = 78) demonstrated gender parity (between 45–55% women/gender minorities). Journals categorized as PEO Health had the most gender diversity. Furthermore, 84% of editors (n = 23,280) were based in high-income countries and only 2.5% of journals (n = 15) demonstrated economic parity in their editorial boards (between 45–55% editors from LMICs). Geographically, the majority of editors' institutions were based in the United Nations (UN) Western Europe and Other region (76.9%), with 35.2% of editors (n = 9,761) coming solely from the United States and 8.6% (n = 2,373) solely from the United Kingdom. None of the editors-in-chief and only 27 editors in total were women based in low-income countries. Through the examination of journal editorial boards, this study exposes the glaring lack of diversity in editorial boards in environmental science and public health, explores the power dynamics affecting the creation and dissemination of knowledge, and proposes concrete actions to remedy these structural inequities in order to inform more equitable, just and impactful knowledge creation.

## **Gender-based disparities and biases in science: an observational study of a virtual conference**

Junhanlu Zhang, Rachel Torchet, Hanna Julianne

**doi:** <https://doi.org/10.1101/2022.03.07.483337>

Success in STEM (Science, Technology, Engineering, and Math) remains influenced by race, gender, and socioeconomic status. Here, we focus on the impact of gender on question-asking behavior during the 2021 JOBIM virtual conference (Journées Ouvertes en Biologie et Mathématiques). We gathered quantitative and qualitative data including : demographic information, question asking motivations, live observations and interviews of participants. Quantitative analyses include unprecedented figures such as the fraction of the audience identifying as LGBTQIA+ and an increased attendance of women in virtual conferences. Although parity was reached in the audience, women asked half as many questions as men. This under-representation persisted after accounting for seniority of the asker. Interviews of participants highlighted several barriers to oral expression encountered by women and gender minorities : negative reactions to their speech, discouragement to pursue a career in research, and gender discrimination/sexual harassment. Informed by the study, [guidelines](#) for conference organizers have been written.

**2021 Ashley C Griffin, Tiffany I Leung, Jessica D Tenenbaum, Arlene E Chung, Gender representation in U.S. biomedical informatics leadership and recognition, Journal of the American Medical Informatics Association, 2021;, ocaa344, <https://doi-org.proxy.cc.uic.edu/10.1093/jamia/ocaa344>**

## Abstract

### Objective

This study sought to describe gender representation in leadership and recognition within the U.S. biomedical informatics community.

### Materials and Methods

Data were collected from public websites or provided by American Medical Informatics Association (AMIA) personnel from 2017 to 2019, including gender of membership, directors of academic informatics programs, clinical informatics subspecialty fellowships, AMIA leadership (2014-2019), and AMIA awardees (1993-2019). Differences in gender proportions were calculated using chi-square tests.

### Results

Men were more often in leadership positions and award recipients ( $P < .01$ ). Men led 74.7% ( $n = 71$  of 95) of academic informatics programs and 83.3% ( $n = 35$  of 42) of clinical informatics fellowships. Within AMIA, men held 56.8% ( $n = 1086$  of 1913) of leadership roles and received 64.1% ( $n = 59$  of 92) of awards.

### Discussion

As in other STEM fields, leadership and recognition in biomedical informatics is lower for women.

### **Conclusions**

Quantifying gender inequity should inform data-driven strategies to foster diversity and inclusion. Standardized collection and surveillance of demographic data within biomedical informatics is necessary.

2020 Sarna K., Griffin T., Tarlov E., Gerber B., Gabay M., Suda K.  
Trends in Gender Composition on Editorial boards in Leading  
Medicine, Nursing, and Pharmacy Journals. Journal of the  
American Pharmacists Association.  
2020;60(4):565-570.<https://doi.org/10.1016/j.japh.2019.12.018>

.

### **Objective**

To investigate the proportions and trends in gender ratios of journal editorial boards in medicine, nursing, and pharmacy from 1995 to 2016.

### **Design**

This was a pooled cross-sectional evaluation of 21 high-impact medical, nursing, and pharmacy journals.

### **Setting and participants**

The gender composition of editorial boards for each discipline was obtained. Gender expression was based on the person's name or other information available on the Internet.

### **Outcome measures**

The proportion of all editorial board member positions, including editorial leadership positions, occupied by the underrepresented gender, and trends over time were measured.

### **Results**

A total of 5309 editorial board members and 312 editorial leadership positions were identified. From 1995 to 2016, women remained underrepresented across medicine and pharmacy journal editorial boards, whereas men remained underrepresented across nursing journal editorial boards. However, there were statistically significant increases in the representation of the underrepresented gender on editorial boards across all disciplines. Medicine was the only

discipline to experience a statistically significant increase in the underrepresented gender of the editorial board being appointed to a leadership position; the proportion of women increased from 3% in 1995 to 35% in 2016.

## Conclusion

The gender gap in medicine and pharmacy journals appears to be narrowing. Although men continue to lag behind women in nursing journals, they are and have been overrepresented when considering the proportion of men practicing in the field. Overall, continued efforts are needed to resolve gender inequities in academic health sciences.

**2020 Knepper, H., Scutelnicu, G. & Tekula, R. (2020). The slippery slope: Struggling for equity in the academy in the era of #MeToo. Public Administration Review 80(6): 1111-1117. <https://doi.org/10.1111/puar.13208>.**

Abstract: The complexity of the sexual harassment language of the #MeToo movement creates discontinuities that may muddy intended communications. Yet understanding this language provides a fuller picture of the experiences that women face. Gender harassment has persisted in the workplace despite long-standing antidiscrimination policies, perhaps because of a universal failure to recognize all forms of it—some of which are more pervasive and common than sexual abuse. This article considers the ability of the academy to affect sexual harassment in public administration. It discusses the implications of gender harassment, the least recognized form of sexual harassment, and makes recommendations for overcoming gender barriers in the academy and in practice. Evidence-based guidance for advancing women in the academy may create more equitable and just spaces for teaching and learning. Public administration classrooms and scholarship represent critical opportunities to recognize patterns of organizational practice and systematically redress gender harassment in the workplace.



2020 de Kleijn, M, Jayabalasingham, B, Falk-Krzesinski, HJ, Collins, T, Kuiper-Hoyng, L, Cingolani, I, Zhang, J, Roberge, G, et al: 2020. The Researcher Journey Through a Gender Lens: An Examination of Research Participation, Career Progression and Perceptions Across the Globe. Retrieved from <https://www.elsevier.com/gender-report>. (Online March 8, 2020)

[The Researcher Journey Through a Gender Lens](#) is a free report that examines critical issues and performance in research through a gender lens using quantitative and qualitative research methods. Report analyses cover 15 countries plus the EU across 26 subject areas: Assessing gender diversity; Measuring research footprint; Assessing author continuity and mobility; Evaluating collaboration patterns; and, Perceptions about gender-related issues in academia. The goal of producing the report was to elucidate the role gender plays within the research enterprise, offering powerful data-driven insights for research institutions to inform evidence-based policies and interventions and inspire further studies.

2020 Knepper, H., Scutelnicu, G. & Tekula, R. (2020). Why gender and research productivity matters in academia? Exploring evidence from NASPAA accredited schools. *Journal of Public Affairs Education* 26(1): 51-72; doi: [10.1080/15236803.2019.1565066](https://doi.org/10.1080/15236803.2019.1565066).

This study is the first to examine the research productivity of public administration faculty by gender through the perceptions of full-time faculty members at NASPAA-accredited schools. It specifically examines how research productivity varies by gender according to faculty tenure status and academic rank. This study extends previous research by using survey methodology to explore research productivity through the perceptions of faculty using gender, tenure status, and academic rank. Findings suggest that during tenure-track years and after tenure, women publish significantly less than men overall. Findings also suggest that women who are assistant and full professors publish significantly less than men in similar ranks. Finally, the study finds no significant differences in publication rates between women and men who reported themselves to be associate professors. Through this study, the authors make three contributions to the discipline and present three recommendations that explore avenues to develop the research productivity of women in public administration scholarship.

c2019 Hardt, H., Smith, A.E., Kim, H.J., and Meister, P. (2019).  
The Gender Readings Gap in Political Science Graduate Training.  
The Journal of Politics. (Online July 12, 2019).  
<https://www.journals.uchicago.edu/doi/10.1086/704784>

What influences gender representation in assigned readings during graduate training? Whereas recent studies have identified gender gaps in citations and publications, less is known about the readings used to train future political scientists. Introducing a unique data set of 88,673 citations from 905 PhD syllabi and reading lists, we find that only 19% of assigned readings have female first authors. Scholarship by female scholars is underrepresented in all subfields, relative to several benchmarks. Both supply- and demand-side factors affect gender representation. First, representation of female-authored readings varies by the size of the pool of female scholars, over time and across subfields. Second, instructor gender and department composition affect demand for female-authored scholarship. As departments hire more female faculty, instructors of both genders become more likely to assign female-authored work. This article contributes an original data set to the study of graduate training and advances understanding of gender diversity in political science.

2019 Smith, A.E., Hardt, H., Meister, P. and Kim, H.J. (2019).  
Gender, Race, Age, and National Origin Predict Whether Faculty  
Assign Female-Authored Readings in Graduate Syllabi. PS:  
Political Science & Politics. (Online August 23, 2019)  
<https://www.cambridge.org/core/journals/ps-political-science-and-politics/article/gender-race-age-and-national-origin-predict-whether-faculty-assign-femaleauthored-readings-in-graduate-syllabi/B4CC00597FDB805D57AB64A67DA42EB2>

Numerous studies document female scholars' underrepresentation in political science publications and citations, yet few examine graduate syllabi. In this study, we assess the impact of instructors' individual characteristics (i.e., race, gender, and age) on which readings they assign. We use what is—to our knowledge—the largest dataset of graduate readings to date: the GRaduate Assignments DataSet (GRADS), with 75,601 readings from 840 syllabi in 94 US PhD programs. We report several findings. First, overall, instructors infrequently assign female-authored scholarship relative to the rates at which women publish. Second, instructors

who are women, people of color, and those from more gender-equal countries assign significantly more female-authored readings than white male instructors and those from less gender-equal countries. Third, among women—but not men—older instructors assign more female-authored work. We suggest that women’s underrepresentation on syllabi may contribute to “the leaky pipeline,” which describes women’s attrition from academic careers.

**2019 Scutelnicu, G. & Knepper, H. (2019). A tale of two journals: Women’s representation in public administration scholarship. Public Integrity 21(1): 38-53; doi: [10.1080/10999922.2017.1421009](https://doi.org/10.1080/10999922.2017.1421009).**

This study examines women’s representation in public administration scholarship by analyzing the research method and the content of 618 articles published in the Journal of Public Administration Research and Theory, and the Public Performance and Management Review from 2004 to 2013. Findings indicate that women publish less than men as solo, lead, and top 10 authors in these two journals. The study identifies men’s publishing acceptance of articles using predominantly quantitative methods and women’s publishing acceptance of articles using predominantly qualitative methods. Finally, this study finds that university affiliation may contribute to publishing in one or the other journal under research. This study is suggestive in nature and provides further evidence of the underrepresentation of women in public administration scholarship.

**2018 Phull, K., Ciflikli, G. & Meibauer, G. (2018). Gender and bias in the International Relations curriculum: Insights from reading lists, European Journal of International Relations (online, August 20, 2018); <http://journals.sagepub.com/doi/10.1177/1354066118791690>.**

Following growing academic interest and activism targeting gender bias in university curricula, we present the first analysis of female exclusion in a complete International Relations curriculum, across degree levels and disciplinary subfields. Previous empirical research on gender bias in the teaching materials or International Relations has been limited in scope, that is, restricted to PhD curricula, non-random sampling, small sample sizes<sup>1</sup> predominately US-focused. By contrast, this study uses an original data set of 43 recent syllabi comprising the entire International Relations curriculum at the London School of Economics to investigate the gender gap in the discipline’s teaching materials. We find evidence of bias that reproduces

patterns of female exclusion: 79.2% of texts on reading lists are authored exclusively by men, reflecting the representation of women neither in the professional discipline nor in the published discipline. We find that level of study, subfield and the gender and seniority of the course convener matter. First, female author inclusion improves as the level of study progresses from undergraduate to PhD. This suggests the rigid persistence of a 'traditional International Relations canon' at the earliest disciplinary stage. Second, the International Organisations/Law subfield is more gender-inclusive than Security or Regional Studies, while contributions from Gender/Feminist Studies are dominated by female authorship. These patterns are suggestive of gender stereotyping within subfields. Third, female-authored readings are assigned less frequently by male and/or more senior course conveners. Tackling gender bias in the taught discipline must therefore involve a careful consideration of the linkages between knowledge production and dissemination, institutional hiring and promotion, and pedagogical practices.

2018 Stewart, A. J. & Valian, V. (2018). *An inclusive academy: Achieving diversity and excellence*. Cambridge, MA: MIT Press.

[https://www.amazon.com/dp/B07F3MR2KH/ref=dp-kindle-redirect?\\_encoding=UTF8&btkr=1](https://www.amazon.com/dp/B07F3MR2KH/ref=dp-kindle-redirect?_encoding=UTF8&btkr=1)

Most colleges and universities embrace the ideals of diversity and inclusion, but many fall short, especially in the hiring, retention, and advancement of faculty who would more fully represent our diverse world—in particular women and people of color. In this book, Abigail Stewart and Virginia Valian argue that diversity and excellence go hand in hand and provide guidance for achieving both.

Stewart and Valian, themselves senior academics, support their argument with comprehensive data from a range of disciplines. They show why merit is often overlooked; they offer statistics and examples of individual experiences of exclusion, such as being left out of crucial meetings; and they outline institutional practices that keep exclusion invisible, including reliance on proxies for excellence, such as prestige, that disadvantage outstanding candidates who are not members of the white male majority.

Perhaps most important, Stewart and Valian provide practical advice for overcoming obstacles to inclusion. This advice is based on their experiences at their own universities, their consultations with faculty and administrators at many other institutions, and data on institutional change. Stewart and Valian offer recommendations for changing structures and practices so that people become successful in ways that benefit everyone. They describe better ways of searching for job candidates; evaluating candidates for hiring, tenure, and promotion; helping faculty succeed; and broadening rewards and recognition.

2018 Ford, H.L., Brick, C., Blaufuss, K., Dekens, P.S. (2018). Gender inequity in speaking opportunities at the American Geophysical Union Fall Meeting. Nature Communications. <https://www.nature.com/articles/s41467-018-03809-5>

Implicit and explicit biases impede the participation of women in science, technology, engineering, and mathematics (STEM) fields. Across career stages, attending conferences and presenting research are ways to spread scientific results, find job opportunities, and gain awards. Here, we present an analysis by gender of the American Geophysical Union Fall Meeting speaking opportunities from 2014 to 2016. We find that women were invited and assigned oral presentations less often than men. However, when we control for career stage, we see similar rates between women and men and women sometimes outperform men. At the same time, women elect for poster presentations more than men. Male primary conveners allocate invited abstracts and oral presentations to women less often and below the proportion of women authors. These results highlight the need to provide equal opportunity to women in speaking roles at scientific conferences as part of the overall effort to advance women in STEM.

2018 Titone, D., Tiv, M., & Pexman, P. M. (2018). The status of women cognitive scientists in Canada: Insights from publicly available NSERC funding data. <https://osf.io/kubh2/>

A crucial question within science and academia, and cognitive science specifically, is whether there is gender disparity in opportunity and advancement over the professional lifespan (e.g., Ceci, Ginther, Kahn, & Williams, 2014; Geraci, Balsis, & Busch, 2015; Valian, 1998). To investigate this question, we analyzed gender distributions in publicly available federal funding data from the Natural Sciences and Engineering Research Council (NSERC) of Canada that are specific to cognitive psychology and cognitive neuroscience. There were three key results. First, the proportion of women cognitive scientists progressively diminished at each career stage, particularly at the transition between graduate and postdoctoral studies. Second, female principal investigators (PI) received smaller average Discovery Grant amounts, and were less likely to receive Discovery Accelerator Supplements as a proportion of all Discovery Grants funded. Finally, at the PI level, gender differences were relatively smaller for institution-initiated grants (i.e., Canada Research Chairs) vs. investigator-initiated grants (i.e., Discovery Grants). It is our hope that presentation of such data, in concert with other recent reports for our field (e.g.,

Klatzky, Holt, & Behrmann, 2015; Peelle, 2016; Vaid & Geraci, 2016), continues to raise awareness that gender parity issues remain a concern that deserves ongoing attention within the field of cognitive science in Canada.

2018 Pojani, D., Olvera-Garcia, J., Sipe, N., Byrne, J. (2018).  
“Australian cities are crying out for better planning, but the  
research funding is missing.” The Conversation 23 Feb.

<https://theconversation.com/australian-cities-are-crying-out-for-better-planning-but-the-research-funding-is-missing-91651>

The Australian Research Council (ARC) provided only A\$31.7 million for 91 urban and regional planning research projects between 2010 and 2018. The likelihood of being awarded an ARC grant was considerably higher for more senior male planning academics. Professors received more than twice as many grants as associate professors. Associate professors in turn received about twice as many grants as senior lecturers. While males were the lead investigators on 59 ARC grants between 2010 and 2018, females led only 32 grants. Although differences were small among lecturers, the “funding gender gap” broadened considerably at the professorial levels. Male professors held 6.4 times as many ARC grants as female professors, although there were only 2.7 times more male professors than female professors. ARC grants seemed to “snowball” (holding one grant substantially affected the chances of winning another) and tended to cluster around certain individuals. The concern here is that an [“old boy network” effect](#) may be in place.

Why the gender gap? Male-dominated grant review committees tend to evaluate women, especially younger women, more harshly. In the ARC College of Experts, which evaluates grant applications, [only 70 of the 176 members – 40% – are female](#). Inequitable allocation of ARC research funding is problematic in every discipline but especially so in urban planning due to the [sexism inherent in urban development](#). Virtually everything in our cities – streets, squares, parks, buildings – has been designed and shaped by men. Nearly all of the references for urban best practices, as taught in Australian universities, are written by men. What would urban planning research and practice be like if it were female-led? Might cities become less car-dependent and more cycling-friendly? Might they have fewer dark alleys and more sunlit parks and kindergartens? We could begin to answer some of these questions if research funding for female planning academics was prioritised.

2017? Del Pinal, G., Madva, A. and Reuter, K. (2017, early view). Stereotypes, conceptual centrality and gender bias: An empirical investigation. *Ratio: An International Journal of Analytic Philosophy*. (DOI: 10.1111/rati.12170)

Discussions in social psychology overlook an important way in which biases can be encoded in conceptual representations. Most accounts of implicit bias focus on ‘mere associations’ between features and representations of social groups. While some have argued that some implicit biases must have a richer conceptual structure, they have said little about what this richer structure might be. To address this lacuna, we build on research in philosophy and cognitive science demonstrating that concepts represent dependency relations between features. These relations, in turn, determine the centrality of a feature  $f$  for a concept  $C$ : roughly, the more features of  $C$  depend on  $f$ , the more central  $f$  is for  $C$ . In this paper, we argue that the dependency networks that link features can encode significant biases. To support this claim, we present a series of studies that show how a particular brilliance-gender bias is encoded in the dependency networks which are part of the concepts of female and male academics. We also argue that biases which are encoded in dependency networks have unique implications for social cognition.

2016 Dutt, K., Pfaff, D.L., Bernstein, A.F., Dillard, J.S., Block, C.J. (2016). Gender differences in recommendation letters for postdoctoral fellowships in geoscience. *Nature Geoscience*. <https://www.nature.com/articles/ngeo2819>

Gender disparities in the fields of science, technology, engineering and mathematics, including the geosciences, are well documented and widely discussed<sup>1,2</sup>. In the geosciences, despite receiving 40% of doctoral degrees, women hold less than 10% of full professorial positions<sup>3</sup>. A significant leak in the pipeline occurs during postdoctoral years<sup>4</sup>, so biases embedded in postdoctoral processes, such as biases in recommendation letters, may be deterrents to careers in geoscience for women. Here we present an analysis of an international data set of 1,224 recommendation letters, submitted by recommenders from 54 countries, for postdoctoral fellowships in the geosciences over the period 2007–2012. We examine the relationship between applicant gender and two outcomes of interest: letter length and letter tone. Our results reveal that female applicants are only half as likely to receive excellent letters versus good letters compared to male applicants. We also find no evidence that male and female



recommenders differ in their likelihood to write stronger letters for male applicants over female applicants. Our analysis also reveals significant regional differences in letter length, with letters from the Americas being significantly longer than any other region, whereas letter tone appears to be distributed equivalently across all world regions. These results suggest that women are significantly less likely to receive excellent recommendation letters than their male counterparts at a critical juncture in their career.

2016 Gonsalves, Allison J., Danielsson, Anna, and Pettersson, Helena (2016). [Masculinities and experimental practices in physics: The view from three case studies](#). *Physical Review - Physics Education Research*, 12(2),

This article analyzes masculinity and experimental practices within three different physics communities. This work is premised on the understanding that the discipline of physics is not only dominated by men, but also is laden with masculine connotations on a symbolical level, and that this limited and limiting construction of physics has made it difficult for many women to find a place in the discipline. Consequently, we argue that in order to further the understanding of gender dynamics within physics communities and enrich the current understandings about the lack of women in physics, perspectives from masculinity studies are crucial. The article draws on three different ethnographic case studies dealing with undergraduate students, graduate students, and research scientists.

2016 Vaid, Jyotsna, and Geraci, Lisa (2016). An examination of women's professional visibility in cognitive psychology. *Feminism and Psychology*, 26(3), 292-319.

The professional visibility of women in cognitive psychology, a subfield of psychology where the gender distribution in doctoral degrees has been roughly equal *for several decades*. Across all indicators surveyed, male cognitive psychologists were found to be more visible than their female counterparts: they are over-represented in professional society governance, as editors-in-chief of 60 leading journals in the field (80% are men), as Fellows in professional societies, and as recipients of prestigious senior level awards (over 85% are awarded to men). A gender parity in doctoral degrees in cognitive psychology clearly does not translate into a parity in professional visibility.



2017 Johnson, Camille S., Smith, Pamela K., & Wang, Chunlei. (in press). Sage on the stage: Women's representation at an academic conference. *Personality and Social Psychology Bulletin*. DOI: 10.1177/0146167216688213

Who presents at conferences matters. Presenting research benefits speakers, and presenters shape the conclusions audiences draw about who can succeed in a field. This is particularly important for members of historically underrepresented or disadvantaged groups, such as women. We investigated gender representation over a 13-year period among speakers at the largest social and personality psychology conference. On average, women were underrepresented as speakers, though this effect diminished over time. Chairs appeared to serve as gatekeepers: In symposia chaired by women, almost half of the invited speakers were women, whereas in symposia chaired by men, it was a third. The representation of women as speakers varied significantly by academic rank, with women underrepresented at lower ranks but not as full professors, and by topic. Women also tended to present with a smaller, less varied array of individuals than men, though this could be explained by women's lower average academic rank.

2015 Williams, Wendy M. and Stephen Ceci (2015). National hiring experiments reveal 2:1 faculty preference for women on STEM tenure track. *Proceedings of the National Academy of Sciences (PNAS)*. 112: 5360-5365  
<https://www.pnas.org/content/112/17/5360.abstract>

National randomized experiments and validation studies were conducted on 873 tenure-track faculty (439 male, 434 female) from biology, engineering, economics, and psychology at 371 universities/colleges from 50 US states and the District of Columbia. In the main experiment, 363 faculty members evaluated narrative summaries describing hypothetical female and male applicants for tenure-track assistant professorships who shared the same lifestyle (e.g., single without children, married with children). Applicants' profiles were systematically varied to

disguise identically rated scholarship; profiles were counterbalanced by gender across faculty to enable between-faculty comparisons of hiring preferences for identically qualified women versus men. Results revealed a 2:1 preference for women by faculty of both genders across both math-intensive and non-math-intensive fields, with the single exception of male economists, who showed no gender preference. Results were replicated using weighted analyses to control for national sample characteristics. In follow-up experiments, 144 faculty evaluated competing applicants with differing lifestyles (e.g., divorced mother vs. married father), and 204 faculty compared same-gender candidates with children, but differing in whether they took 1-y-parental leaves in graduate school. Women preferred divorced mothers to married fathers; men preferred mothers who took leaves to mothers who did not. In two validation studies, 35 engineering faculty provided rankings using full curricula vitae instead of narratives, and 127 faculty rated one applicant rather than choosing from a mixed-gender group; the same preference for women was shown by faculty of both genders. These results suggest it is a propitious time for women launching careers in academic science. Messages to the contrary may discourage women from applying for STEM (science, technology, engineering, mathematics) tenure-track assistant professorships.

**2016 Indicators of Esteem: gender and prestige in academic work. Coate, K. and Kandiko Howson, C. (2016) British Journal of Sociology of Education. 37(4): 567-585.**

The continued gender imbalance in senior positions in higher education is a problem that persists despite decades of feminist research and publications in the area, as well as interventions in many countries to promote the advancement of women. In this article we view the issue of gender inequality through the lens of the prestige economy, which suggests that academics are motivated by prestige factors accrued through advancement in their careers. Prestige, authority and status, we suggest, may be more easily acquired by male academics. We draw on a case study of one institution in the Republic of Ireland, including data from a survey on academic careers (n = 269), to explore how the concept of prestige is gendered. We explore the cumulative effect of four themes: homosociability; non-transparency of criteria; academic workload balance; and self-promotion.

**2011 [Do women publish fewer journal articles than men? Sex differences in publication productivity in the social sciences](#) Schucan Bird, K (2011) British Journal of Sociology of Education, Vol. 32, Issue 6**

This paper examines whether women and men publish journal articles at a level comparable with their representation within the social sciences. The paper also explores sex differences in patterns of single authorship and co-authorship. To do so, demographic data of the UK social sciences is compared with a sample of UK-authored journal articles. The findings of the study show that, overall, female academics contribute to a lower proportion of journal articles than the proportion of academic staff that they constitute. However, within certain disciplines (social policy and psychology) women publish articles at a level comparable with the proportion of the discipline that they constitute. These findings, it is argued, can be helpfully understood as both cause and consequence of the gendered academy.

2016 [Gender, Productivity, and Prestige in Computer Science Faculty Hiring Networks](#) Samuel F. Way, Daniel B. Larremore, Aaron Clauset (2016) *Proc. 2016 World Wide Web Conference (WWW)*, 1169-1179. Added by Daniel Larremore; [larremore@santafe.edu](mailto:larremore@santafe.edu)

- **Summary:** Patterns of faculty hiring in computer science were analyzed by fitting parameterized generative models to a complete data set of all sitting computer science faculty in a 2011. The model took into account university prestige (previously analyzed [here](#)), number of publications, geography, postdoc experience, and gender. Gender effects do exist but are subtle, as discussed in the abstract and [open-access paper](#).
- **Abstract:** Women are dramatically underrepresented in computer science at all levels in academia and account for just 15% of tenure-track faculty. Understanding the causes of this gender imbalance would inform both policies intended to rectify it and employment decisions by departments and individuals. Progress in this direction, however, is complicated by the complexity and decentralized nature of faculty hiring and the non-independence of hires. Using comprehensive data on both hiring outcomes and scholarly productivity for 2659 tenure-track faculty across 205 Ph.D.-granting departments in North America, we investigate the multidimensional nature of gender inequality in computer science faculty hiring through a network model of the hiring process. Overall, we find that hiring outcomes are most directly affected by (i) the relative prestige between hiring and placing institutions and (ii) the scholarly productivity of the candidates. After including these, and other features, the addition of gender did not significantly reduce modeling error. However, gender differences do exist, e.g., in scholarly productivity, postdoctoral training rates, and in career movements up the rankings of universities, suggesting that the effects of gender are indirectly incorporated into hiring decisions through gender's covariates. Furthermore, we find evidence that more highly ranked departments recruit female faculty at higher than expected rates, which appears to inhibit similar efforts by lower ranked departments. These findings illustrate the subtle nature of gender inequality in faculty hiring networks and provide new insights to the underrepresentation of women in computer science.

2015 [The bachelor's to Ph.D. STEM pipeline no longer leaks more women than men: A 30-year analysis](#) David I. Miller and Jonathan Wai (2015) *Frontiers in Psychology* 6, 36.

- **Summary:** Men were more likely than women to progress from the bachelor's to PhD degree in STEM in earlier, but not later, cohorts (e.g., students who graduated college in the 1970s, but not 1990s). Bias against female STEM college graduates still likely exists in some relevant contexts (e.g., laboratory manager hiring), but those biases haven't caused women to leave STEM more often than men in that transition (see discussion on right hand side of page 7 of [the study's PDF](#)). This [Nature article](#) summarizes the study and briefly discusses related data on persistence in transitions after the PhD.
- **Abstract:** For decades, research and public discourse about gender and science have often assumed that women are more likely than men to “leak” from the science pipeline at multiple points after entering college. We used retrospective longitudinal methods to investigate how accurately this “leaky pipeline” metaphor has described the bachelor's to Ph.D. transition in science, technology, engineering, and mathematics (STEM) fields in the U.S. since the 1970s. Among STEM bachelor's degree earners in the 1970s and 1980s, women were less likely than men to later earn a STEM Ph.D. However, this gender difference closed in the 1990s. Qualitatively similar trends were found across STEM disciplines. The leaky pipeline metaphor therefore partially explains historical gender differences in the U.S., but no longer describes current gender differences in the bachelor's to Ph.D. transition in STEM. The results help constrain theories about women's underrepresentation in STEM. Overall, these results point to the need to understand gender differences at the bachelor's level and below to understand women's representation in STEM at the Ph.D. level and above. Consistent with trends at the bachelor's level, women's representation at the Ph.D. level has been recently declining for the first time in over 40 years.

2015 [The lived experiences of female leaders in two university settings: Perceived supports, barriers, and challenges](#) Brittany A. E. Jakubiec (2015) Retrievable from: <http://www.islandscholar.ca/fedora/repository/ir:16029> Unpublished master's thesis, University of Prince Edward Island, Charlottetown, PE

Added by B Jakubiec, [bjakubiec@upei.ca](mailto:bjakubiec@upei.ca)

**Abstract:** The dearth of women in higher education both as full professors and senior administrators is alarming, and the factors impeding their entrance and limiting their advancement are relatively unknown. The purpose of this research was to document the lived experiences of women leaders who were full professors or who held senior leadership positions in two universities in Atlantic Canada. I researched the perceived supports, challenges, and barriers that women leaders faced in their professional lives, as well as the influence of gender in their leadership positions. I approached the research from a social constructivism standpoint and utilized a phenomenological research design. I used standpoint theory to analyze the data. Data sources included two interviews with each participant and a seven-day leadership journal from each participant. Women noted multiple supports, challenges, and barriers in their personal and professional lives. Supports include husbands, mentors, workshops, and networking. Challenges and barriers included children, colleagues, work/life conflicts, invisibility, and a lack of leadership development programs. Findings indicated that gender equality has not been achieved in the postsecondary setting, and gendered expectations, sexism, and discrimination remain strong barriers for women. Applying standpoint theory, the social location of the participants impacted their lives, opinions, and views of leadership in postsecondary institutions. Their lived realities and experiences changed over time as the academic and institutional culture changed over time, and, as such, their views about women and leadership were altered. Implications of this work are that university leaders need to create supports for women and make them easily accessible, and create a women-friendly environment that will increase the ease with which women can enter, advance, and succeed in the institution. Keywords: women's studies, leadership, higher education, senior administration, professorship

2015 Gender Bias in International Relations Syllabi Jeff Colgan  
*International Studies Quarterly* (forthcoming) and *Duck of Minerva* (Aug 27 2015)

<http://duckofminerva.com/2015/08/new-evidence-on-gender-bias-in-ir-syllabi.html>

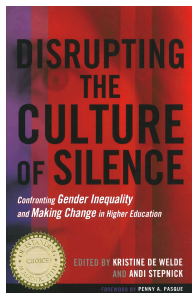
**Summary** This work shows that male and female instructors assign different kinds of readings for International Relations (IR) PhD courses. First, female instructors tend to assign more readings by female authors than male instructors. Men or all-male teams authored "only" 71.5 percent of readings in courses taught by female instructors. By contrast, male authors wrote 79.1 percent of readings in courses taught by male instructors. The difference is statistically significant. Put differently, female instructors assign *36 percent more readings by women* (including co-ed teams) than male instructors do, or about 5 readings per course. Second, female instructors are considerably more averse to assigning their own research as required

readings. Male instructors assigned about twice as much of their own work; again, the difference is statistically significant.

**2014 Disrupting the culture of silence. Kris De Welde (Ed.)**

**[kdewelde@fgcu.edu](mailto:kdewelde@fgcu.edu) Andi Stepnick (Ed.)**

**[Andi.Stepnick@Belmont.edu](mailto:Andi.Stepnick@Belmont.edu) Stylus Publishing. November 2014.**



Despite tremendous progress toward gender equality and equity in institutions of higher education, deep patterns of discrimination against women in the academy persist. From the “chilly climate” to the “old boys’ club,” women academics must navigate structures and cultures that continue to marginalize, penalize, and undermine their success.

This book is a “tool kit” for advancing greater gender equality and equity in higher education. It presents the latest research on issues of concern to women academics, and to anyone interested in a more equitable academy. It documents the challenging, sometimes hostile experiences of women academics through analysis of qualitative and quantitative data, including narratives from women academics of different races and ethnicities across disciplines, ranks, and university types. This edited volume addresses questions such as:

- What do women academics classify as challenging, inequitable, or “hostile” work environments and experiences? How do these vary by women’s race/ethnicity, rank, sexual orientation, or other social locations?
- How do academic cultures and organizational structures work independently and in tandem to foster or challenge such work climates?
- What actions can institutions and individuals—independently and collectively—take toward equity in the academy?

The contributors’ research draws upon the experiences of women academics including those with under-examined identities such as lesbian, feminist, married or unmarried, and contingent faculty. And, it offers new perspectives on persistent issues such as family policies, pay and promotion inequalities, and disproportionate service burdens.

The editors provide case studies of women who have encountered antagonistic workplaces, and offer action steps, best practices, and more than 100 online resources for individuals navigating similar situations.

Beyond women in academe, this book is for their allies and for administrators interested in changing the climates, cultures, and policies that allow gender inequality to exist on their campuses, and to researchers/scholars investigating these phenomena. It aims to disrupt complacency amongst those who claim that things are “better” or “good enough” and to provide readers with strategies and resources to counter barriers created by culture, climate, or institutional structures.

**\*Note:** We hope our “toolkit” approach with an emphasis on strategies & resources at the personal, organizational, and extra-organizational will help women academics in challenging workplaces to survive (and possibly thrive). Also, we hope it will assist allies and institutions in creating organizational change. For more, see: <http://www.disruptingthecultureofsilence.com/> (If this isn’t ok here, please feel free to delete.)

**2015 What Happens Before? A Field Experiment Exploring How Pay and Representation Differentially Shape Bias on the Pathway into Organizations. Milkman, K.L., M. Akinola, and D. Chugh (2015) Journal of Applied Psychology, 100(6), 1678-1712**  
<https://psycnet.apa.org/record/2015-15680-001> Preprint:  
[https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2063742](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2063742)

**Abstract:** Little is known about how discrimination manifests before individuals formally apply to organizations or how it varies within and between organizations. We address this knowledge gap through an audit study in academia of over 6,500 professors at top U.S. universities drawn from 89 disciplines and 259 institutions. In our experiment, professors were contacted by fictional prospective students seeking to discuss research opportunities prior to applying to a doctoral program. Names of students were randomly assigned to signal gender and race (White, Black, Hispanic, Indian, Chinese), but messages were otherwise identical. We hypothesized that discrimination would appear at the informal “pathway” preceding entry to academia and would vary by discipline and university as a function of faculty representation and pay. We found that



when considering requests from prospective students seeking mentoring in the future, faculty were significantly more responsive to White males than to all other categories of students, collectively, particularly in higher-paying disciplines and private institutions. Counterintuitively, the representation of women and minorities and discrimination were uncorrelated, a finding that suggests greater representation cannot be assumed to reduce discrimination. This research highlights the importance of studying decisions made before formal entry points into organizations and reveals that discrimination is not evenly distributed within and between organizations.

**2014 Career Development of Women in Academia: Traversing the Leaky Pipeline** Courtney E. Gasser and Katharine S. Shaffer (2014) *The Professional Counselor*, Volume 4 (Issue 4), Pages 332-352

<http://tpcjjournal.nbcc.org/wp-content/uploads/2014/10/Pages-332-352.pdf>

**Summary**nt relationship between spousal hiring policies and women's productivity.

4. Men who work in a department where they perceive it as easy to adjust work schedules to care for family report significantly more publications and lower teaching loads, In comparison, there is no significant relationship between perceived department flexibility and work outcomes for women.

**2013 The Gender Citation Gap in International Relations**  
Daniel Maliniak, Ryan Powers, and Barbara F Walter  
*International Organization* 67, Fall 2013, pp 889-922

Abstract This article investigates the extent to which citation and publication patterns differ between men and women in the international relations (IR) literature. Using data from the Teaching, Research, and International Policy project on peer reviewed publications between 1980 and 2006, we show that women are systematically cited less than men after controlling for a large number of variables including year of publication, venue of publication, substantive focus, theoretical perspective, methodology, tenure status, and institutional affiliation. These results are robust to a variety of modeling choices. We then turn

to network analysis to investigate the extent to which the gender of an article's author affects that article's relative centrality in the network of citations between papers in our sample. Articles authored by women are systematically less central than articles authored by men, all else equal. This is likely because 1) women tend to cite themselves less than men, and 2) men, who make up a disproportionate share of IR scholars, tend to cite men more than women. This is the first study in political science to reveal significant gender differences in citation: Our work summarizes and builds on empirical research and other professional literature regarding the gender inequities faced by women graduate students and academicians during their careers in academia. We reviewed the literature and identified relevant variables that have been investigated by others, and categorized these variables into themes in order to build our model. The model depicts the multiple issues faced by women in academia. This work also does a good job of briefly summarizing the major literature on career development, gender bias and discrimination experienced by women in academia.

**Abstract:** Women's experiences in academia are laden with a fundamental set of issues pertaining to gender inequalities. A model reflecting women's career development and experiences around their academic pipeline (or career in academia) is presented. This model further conveys a new perspective on the experiences of women academicians before, during and after their faculty appointments and can help in career counseling. Specifically, this model provides career counselors with a framework to conceptualize the concerns of women clients who work in academic environments. Other implications for career counseling as well as limitations and future directions also are discussed.

2014 Feeney, M. K., M. Bernal, and L. Bowman. 2014. [Enabling work? Family-friendly policies and academic productivity for men and women scientists](#). *Science and Public Policy*. 41(6):750-764. March 5, 2014. doi: 10.1093/scipol/scu006.

**Abstract:** Universities throughout the USA have adopted family-friendly policies to enable life and career balance and to encourage the attraction and retention of women scientists. Although family-leave policies are designed to provide job protection for parents and ensure that faculty can remain productive scholars, it is unclear whether or not formal family-leave policies have played a positive role in areas of academic productivity such as publishing and teaching. This research investigates the relationships between university family-leave policies and productivity among faculty in six fields of science (Biology, Chemistry, Computer Science, Earth and Atmospheric Sciences, Electrical Engineering, and Physics) using responses from a national survey of 1,598 faculty at 150 research universities and data from status of women

reports and faculty handbooks. The hierarchical multi-level analysis indicates that generous formal family-leave policies, on-site childcare, and spousal hiring policies differently affect the productivity of women and men academic scientists

#### Findings:

1. Generous family-leave policies (e.g. paid maternity, paternity, adoption, and paternal leave) are significantly related to productivity. For women, leave policies are related to increased journal publications and maintenance of teaching loads. For men, leave policies are related to reduced teaching loads.
2. On-site daycare is related to increased journal publications for men. In comparison, women scientists who work at universities that have on-site childcare report increased teaching loads.
3. Formal policies for spousal hiring affect productivity for men, but not women. Men who work at universities with formal spousal hiring policies produce significantly more publications than those at universities without formal spousal hiring policies. There is no significant pattern and is especially meaningful because citation counts are increasingly used as a key measure of research quality and impact.

## 2012 The dismal stats about the low number of women aspiring to academic careers and why [“Why women leave academia and why universities should be worried”](#) *The guardian* | May 24, 2012

This article cites the alarming conclusion of a study of PhD students in chemistry in the UK: only 12% of third year female PhD students want a career in academia. Author Curt Rice uses these statistics to call for institutional change: “Universities will not survive as research institutions unless university leadership realises that the working conditions they offer dramatically reduce the size of the pool from which they recruit. We will not survive because we have no reason to believe we are attracting the best and the brightest. When industry is the more attractive employer, our credibility as the home of long-term, cutting edge, high-risk, profoundly creative research, is diminished.”

## 2012 Science faculty's gender bias "[Science faculty's subtle gender biases favor male students](#)" *National Academy of Sciences of the United States of America* | August 21, 2012

This randomized, double-blind study found that both male and female faculty exhibited a bias against female undergraduate students, evaluating them as less competent, hireable, and qualified and offering them less funding and mentorship.

Based on application materials, a candidate for a laboratory manager position was deemed more competent, qualified, and hireable if they had a male name. Identical application materials submitted with a female name were judged as less qualified applicants. In addition, the faculty hiring committee selected a higher starting salary and offered more mentorship to selected male applicants. Gender bias was found in both male and female faculty. The authors of the study acknowledge that bias is often implicit or unintentional, "stemming from repeated exposure to pervasive cultural stereotypes that portray women as less competent but simultaneously emphasize their warmth and likeability compared with men." The authors cite research findings that those in disciplines that value objectivity are particularly susceptible to subtle gender biases because they are not on guard against them. Indeed, these negative biases against female undergraduates may affect their career decisions, and whether they see doctoral studies in the sciences as a viable option.

The authors call for a conscious intervention that addresses faculty gender biases: "The dearth of women within academic science reflects a significant wasted opportunity to benefit from the capabilities of our best potential scientists, whether male or female."

## 2012 Data analysis showing women publish less than men "[Scholarly Publishing's Gender Gap](#)" *The Chronicle of Higher Education* | October 12, 2012

This article uses data from JSTOR to analyze the gender gap in scholarly publishing, exploring interpretations that range from gender bias to women's greater time commitments to teaching and committee work.

"Although the percentage of female authors is still less than women's overall representation within the full-time faculty ranks, the researchers found that the proportion has increased as

more women have entered the professoriate. They also show that women cluster into certain subfields and are somewhat underrepresented in the prestigious position of first author. In the biological sciences, women are even more underrepresented as last author. The last name on a scientific article is typically that of the senior scholar, who is not necessarily responsible for doing most of the research or writing but who directs the lab where the experiment was based."

In the sciences, the order in which authors' names appear is crucial for tenure and promotion, though women are often less confident and assertive when negotiating where their name will appear. When women speak up for themselves, they are often perceived as mean, pushy, and unfeminine. Not only that, the article cites Dr. Shelley Correll, "When women negotiate in general, they are less likely to be successful. People don't consider their requests as legitimate."

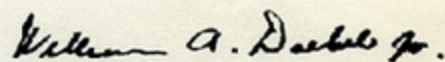
While women are increasingly being listed as first author, those modest gains are not reflected in women being listed as last author, which, according to Dr. Jennifer Jacquet, "suggests that women in scientific fields are allowed to have ideas and do most of the work on a paper, but do not yet have the big grants and labs full of students and postdocs that would establish them in the prestigious last-author position."

## 2013 Gender biases in professional school admissions [“Answering Harvard’s question about my personal life, 52 years later”](#) *The Washington Post* | June 9, 2013

However -- to speak directly -- our experience, even with brilliant students, has been that married women find it difficult to carry out worthwhile careers in planning, and hence tend to have some feeling of waste about the time and effort spent in professional education. (This is, of course, true of almost all graduate professional studies.)

Therefore, for your own benefit, and to aid us in coming to a final decision, could you kindly write us a page or two at your earliest convenience indicating specifically how you might plan to combine a professional life in city planning with your responsibilities to your husband and a possible future family?

Sincerely yours,



William A. Doebele, Jr.  
Assistant Professor  
for the Department

In this article, Phyllis Richman responds to a rejection letter she received from Harvard fifty-two years earlier. The original letter cites a professor's concern that her education will be wasted when she goes on to have a family. Whereas Harvard decided that, should she decide to have a family, Richman would not be able to manage both, she counters that "the choice of how to balance family and graduate school should have been mine."

This article still resonates today: a young female friend recently went on a medical school interview where she was asked if she planned on having a family and how she would balance those responsibilities in addition to medical school. When she told her male interviewer that she would "cross that bridge when I come to it" he responded, "you can't do that!" She was eventually waitlisted.

### 2013 Gender bias in citation "[Gender bias found in how scholars review scientific studies](#)" *Science Daily* | April 3, 2013

This study found that male and female graduate students in communication "rated publications supposedly written by male scientists as higher quality than identical work identified with female authors." Students gave higher ratings to *identical abstracts* submitted with male author names. In addition, female-authored abstracts on topics such as "parenting" and "body image" (rather than "politics") were perceived as gender-appropriate and rated more highly.

### 2013 The Matilda effect in science communication "[The Matilda Effect in Science Communication: An Experiment on Gender Bias in Publication Quality Perceptions and Collaboration Interest](#)" *Science Communication* | October 2013

The Matilda effect, coined in 1993 by Margaret W. Rossier, names the systematic denial of contributions by women in the sciences. Their work is often attributed to male colleagues.

Based on a study that asked graduate students in communications programs across the country were to evaluate conference abstracts, the authors found that male-authored abstracts were associated with greater "scientific quality." Male-authored abstracts that related to topics deemed "masculine" such as communication and political participation or democracy and journalism (as opposed to studies of gender, infancy, and parenting) were judged to have the greatest "scientific quality." Graduate student evaluators were also most enthusiastic about potentially collaborating with the male authors of abstracts on "masculine" topics.

Female-authored abstracts were evaluated more highly when they pertained to “feminine” rather than gender-neutral research topics. The authors demonstrate how even small amounts of gender bias can accumulate over the course of an academic career, affecting grant proposals, promotion and tenure reviews, and hiring decisions.

## 2014 Data analysis showing that males are biased toward majors with average high IQ [Average IQ of students by college major and gender ratio](#) *Randal S. Olson Blog* | June 25, 2014

Author uses Educational Testing Service data and National Center for Education Statistics data to analyze average student IQs by college major. Verbal SAT and Quantitative SAT scores are compared to NCES data on college major choices. An R-squared value of 0.73 shows that the more female-dominated a college major is, the lower the average IQ of the students studying in the major.

## 2014 Gender and teaching evaluations [“Best Way for Professors to Get Good Student Evaluations? Be Male.”](#) *Slate* | December 9, 2014

Based on a small study, this article describes how two professors (one male, one female) each taught two sections of an online course, presenting to one group of students with a male-sounding name and the other with a female-sounding name: “The results were astonishing. Students gave professors they thought were male much higher evaluations across the board than they did professors they thought were female, regardless of what gender the professors actually were.”



2012 Presumed Incompetent: The Intersections of Race and Class for Women in Academia. Ed. Gabriella Gutiérrez y Muhs, Yolanda Flores Niemann, Carmen G. Gonzalez, and Angela P. Harris.

Boulder: University Press of Colorado, 2012.

<http://www.usu.edu/usupress/books/index.cfm?isbn=8695>

[https://www.facebook.com/PresumedIncompetent?ref=br\\_tf](https://www.facebook.com/PresumedIncompetent?ref=br_tf)

The essays in *Presumed Incompetent* interpret and contextualize many studies that document the additional obstacles faced by women of color in academia including the presumption of incompetence (perpetuated by a lack of role models/leaders/mentors), covert and overt racism, conscious and unconscious bias, extra work, tokenism, having to battle stereotypes like the “mammy,” racist and sexist teaching evaluations, and the presumption of self-interest rather than expertise when teaching about oppression.

2015 [Expectations of brilliance underlie gender distributions across academic disciplines](#) Sarah-Jane Leslie, Andrei Cimpian, Meredith Meyer, and Edward Freeland. *Science* | Jan 16, 2015

Some scientific disciplines have lower percentages of women in academia than others. Leslie et al. hypothesized that general attitudes about the discipline would reflect the representation of women in those fields (see the Perspective by Penner). Surveys revealed that some fields are believed to require attributes such as brilliance and genius, whereas other fields are believed to require more empathy or hard work. In fields where people thought that raw talent was required, academic departments had lower percentages of women.

2012 Strengthening Canada’s Research Capacity: The Gender Dimension (2012)

[http://www.scienceadvice.ca/uploads/eng/assessments%20and%20publications%20and%20news%20releases/women\\_university\\_research/wur\\_fullreporten.pdf.pdf](http://www.scienceadvice.ca/uploads/eng/assessments%20and%20publications%20and%20news%20releases/women_university_research/wur_fullreporten.pdf.pdf)



## 2015 Gender Bias in Teaching Evaluations

<https://www.insidehighered.com/news/2015/02/09/new-analysis-rate-my-professors-finds-patterns-words-used-describe-men-and-women>

## 2014 “Double Jeopardy: Gender Bias Against Women of Color in Science,” UC Hastings Law study (2014)

<http://www.uchastings.edu/news/articles/2015/01/double-jeopardy-report.pdf>

While the title of the report focuses on gender, the contents of the study actually document forms of bias marked by the intersection of gender and race.

## 2013 How Can Women Escape the Compensation Negotiation Dilemma? Relational Accounts Are One Answer

1. Hannah Riley Bowles<sup>1</sup>[↓](#)

2. Linda Babcock<sup>2</sup>

1. <sup>1</sup>Harvard University, Cambridge, MA, USA

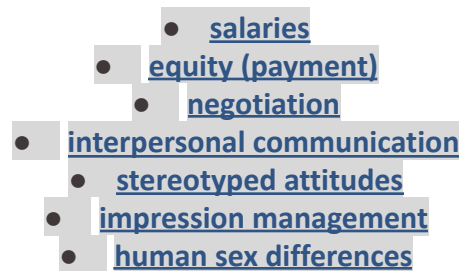
2. <sup>2</sup>Carnegie Mellon University, Pittsburgh, PA, USA

1. Hannah Riley Bowles, John F. Kennedy School of Government, Harvard University, 79 JFK Street, Cambridge, MA 02138, USA. Email: [hannah\\_bowles@harvard.edu](mailto:hannah_bowles@harvard.edu)

### Abstract

Policy makers, academics, and media reports suggest that women could shrink the gender pay gap by negotiating more effectively for higher compensation. Yet women entering compensation negotiations face a dilemma: They have to weigh the benefits of negotiating against the social consequences of having negotiated. Research shows that women are penalized socially more than men for negotiating for higher pay. To address this dilemma, the authors test strategies to help women improve both their negotiation and social outcomes in compensation negotiations. In Study 1, communicating concern for organizational relationships improved female negotiators' social outcomes, and offering a legitimate account for compensation requests improved negotiation outcomes. However, neither strategy—alone or in combination—improved both women's social and negotiation outcomes. Study 2 tested two

strategies devised to improve female negotiators' social and negotiation outcomes by explaining why a compensation request is legitimate in relational terms. Results showed that, although adherence to the feminine stereotype is insufficient, using these "relational accounts" can improve women's social and negotiation outcomes at the same time. Normative implications of conformity to gender stereotypes to reduce gender pay disparities are discussed.



## 2012 Slaying the Seven-Headed Dragon: The Quest for Gender Change in Academia

Van den Brink M, Benschop Y. Slaying the Seven-Headed Dragon: The Quest for Gender Change in Academia. *Gender Work Organ*. 2012 Jan;19(1):71-92.

In this article we propose a multi-level distinction between gender inequality practices and gender equality practices to come to better understanding of the slow pace of gender change in academia. Gender inequality resembles an unbeatable seven-headed dragon that has a multitude of faces in different social contexts. Based on an empirical study on the recruitment and selection of full professors in three academic fields in The Netherlands we discuss practices that should bring about gender equality and show how these interact with gender inequality practices. We argue that the multitude of gender inequality practices are ineffectively countered by gender equality practices because the latter lack teeth, especially in traditional masculine academic environments.

## 2013 The Gender Citation Gap in International Relations

Daniel Maliniak, Ryan Powers, and Barbara F Walter  
*International Organization* 67, Fall 2013, pp 889–922

**Abstract** This article investigates the extent to which citation and publication patterns differ between men and women in the international relations (IR) literature.

Using data from the Teaching, Research, and International Policy project on peer reviewed publications between 1980 and 2006, we show that women are systematically cited less than men after controlling for a large number of variables including year of publication, venue of publication, substantive focus, theoretical perspective, methodology, tenure status, and institutional affiliation. These results are robust to a variety of modeling choices. We then turn to network analysis to investigate the extent to which the gender of an article's author affects that article's relative centrality in the network of citations between papers in our sample. Articles authored by women are systematically less central than articles authored by men, all else equal. This is likely because 1) women tend to cite themselves less than men, and 2) men, who make up a disproportionate share of IR scholars, tend to cite men more than women. This is the first study in political science to reveal significant gender differences in citation patterns and is especially meaningful because citation counts are increasingly used as a key measure of research quality and impact.

## 2019 Female citation impact superiority 1996-2018 in six out of seven English-speaking nations

Mike Thelwall, Statistical Cybermetrics Research Group, University of Wolverhampton, UK.

Efforts to combat continuing gender inequalities in academia need to be informed by evidence about where differences occur. Citations are relevant as potential evidence in appointment and promotion decisions, but it is unclear whether there have been historical gender differences in average citation impact that might explain the current shortfall of senior female academics. This study investigates the evolution of gender differences in citation impact 1996-2018 for six million articles from seven large English-speaking nations: Australia, Canada, Ireland, Jamaica, New Zealand, UK, and the USA. The results show that a small female citation advantage has been the norm over time for all these countries except the USA, where there has been no practical difference. The female citation advantage is largest, and statistically significant in most years, for Australia and the UK. This suggests that any academic bias against citing female authored research cannot explain current employment inequalities. Nevertheless, comparisons using recent citation data, or avoiding it altogether, during appointments or promotion may disadvantage females in some countries by underestimating the likely impact of their work, especially in the long term. Keywords: Citation impact; gender differences; research evaluation; academic careers.

<https://arxiv.org/ftp/arxiv/papers/1904/1904.12919.pdf>

2010 Feeney, Mary K. and Margarita Bernal. 2010. **Women in STEM Networks: Who Seeks Advice and Support from Women Scientists?** *Scientometrics* 85(3):767-790.

**Abstract:** Supporting and advancing women's science careers continues to be of interest to researchers, scientists, science funders, and universities. Similarly, professional advice and support networks are important to understanding the advancement of scientific careers. This research aims to marry these two lines of research to investigate and compare the ways in which men and women scientists seek advice and support from women in their networks. Using a sample of academic scientists in nonmedical biology, chemistry, computer science, earth and atmospheric sciences, electrical engineering, and physics we assess the extent to which women and men scientists seek advice and support from women in their networks. We find that field of science is the primary predictor for the presence of women in scientists' advice and support networks. We also find that citizenship, rank, age, and friendship are significantly related to the proportion of women in women's networks, but are not consistently significantly related to the proportion of women in men's networks. We conclude with a discussion of the findings and the distinctions between men and women scientists' advice and support networks.

**Findings:**

- On average, respondents report that women make up around one tenth of their advice networks (13%) and support networks (10%). In nearly all types of advice and support networks, women scientists report that women make up at least one-fifth of their networks. In comparison, men report that women make up about 10% of their advice and support networks.
- Women scientists seek more work/family balance advice (46%) than publishing advice (23%) from women scientists. Men show the same pattern as women, turning to women in their networks for advice about work/family balance (16% for work/family balance, 11% for publishing).
- Men, on average, report having a larger proportion of women in their advice networks than in support networks.
- The most common type of support from women is reviewing papers or proposals. Men report that women on average make up 7% of their support network, with 9% of their support network for reviewing papers or proposals being women.
- Both men and women earth and atmospheric scientists report the highest average number of women in their networks while physicists and electrical engineers report the lowest number of women in their networks, on average.

- 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.
- 
- Background
- 
- Participation of women in the medical profession has increased during the past four decades, but issues of concern persist regarding disparities between the sexes in academic medicine. Advancement is largely driven by peer-reviewed original research, so we sought to determine the representation of female physician-investigators among the authors of selected publications during the past 35 years.
- 
- Methods

## 2006 The “Gender Gap” in Authorship of Academic Medical Literature — A 35-Year Perspective

New England Journal of Medicine 2006;355:281-7.

Original articles from six prominent medical journals — the *New England Journal of Medicine* (*NEJM*), the *Journal of the American Medical Association* (*JAMA*), the *Annals of Internal Medicine* (*Ann Intern Med*), the *Annals of Surgery* (*Ann Surg*), *Obstetrics & Gynecology* (*Obstet Gynecol*), and the *Journal of Pediatrics* (*J Pediatr*) — were categorized according to the sex of both the first and the senior (last listed) author. Sex was also determined for the authors of guest editorials in *NEJM* and *JAMA*. Data were collected for the years 1970, 1980, 1990, 2000, and 2004. The analysis was restricted to authors from U.S. institutions holding M.D. degrees.

### Results

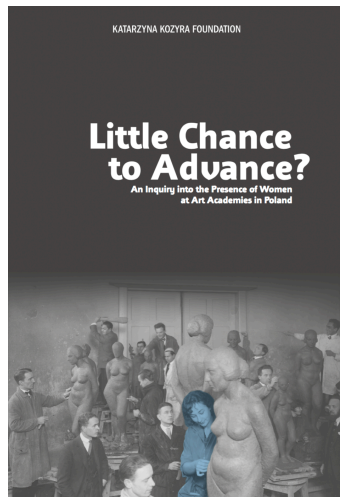
The sex was determined for 98.5 percent of the 7249 U.S. authors of original research with M.D. degrees. The proportion of first authors who were women increased from 5.9 percent in 1970 to 29.3 percent in 2004 ( $P<0.001$ ), and the proportion of senior authors who were women increased from 3.7 percent to 19.3 percent ( $P<0.001$ ) during the same period. The proportion of authors who were women increased most sharply in *Obstet Gynecol* (from 6.7 percent of first authors and 6.8 percent of senior authors in 1970 to 40.7 percent of first authors and 28.0 percent of senior authors in 2004) and *J Pediatr* (from 15.0 percent of first authors and 4.3 percent of senior authors in 1970 to 38.9 percent of first authors and 38.0 percent of senior authors in 2004) and remained low in *Ann Surg* (from 2.3 percent of first authors and 0.7

percent of senior authors in 1970 to 16.7 percent of first authors and 6.7 percent of senior authors in 2004). In 2004, 11.4 percent of the authors of guest editorials in *NEJM* and 18.8 percent of the authors of guest editorials in *JAMA* were women.

## Conclusions

Over the past four decades, the proportion of women among both first and senior physician-authors of original research in the United States has significantly increased. Nevertheless, women still compose a minority of the authors of original research and guest editorials in the journals studied.

## 2015 Little Chance to Advance? An Inquiry into the Presence of Women at Art Academies in Poland



This is a study commissioned by Katarzyna Kozyra Foundation in 2015, a report (also available in English) can be downloaded [here](#).

Gromada, A., Budacz, D., Kawalerowicz, J., Walewska, A.

### Summary:

Poland's visual art academies are extremely feminised as places of study while exceptionally masculinised as places of work (women constitute 77% of students but only 22% of professors). The gender discrepancy between these two career stages – being a student and being a teacher – comparable only to that observed in theological schools, surprised us and became the main focus of this research. The report starts with presenting statistics on participation of women at different stages of education and career at art academies and seeks to identify mechanisms which contributed towards creating the gender disproportions that can be observed.

### Research Methodology:

We researched nine major institutions offering visual art training. Data has been collected from three sources: freedom of information requests, 966 surveys and 32 in-depth interviews.

### Key findings:

- Male students are more likely to receive encouragements from teachers (both male and female) while female students are more likely to be recipients of negative comments
- Male students are more likely to receive assistantship offers from teachers; this gender gap is not explained by scholarship status
- Female and male students have similar aspirations; for both the most desired prospect is to be an active artist or to find employment in a profession related to art, the least attractive prospects are: change of qualifications and employment in a profession unrelated to art
- 58% of female respondents and 52% of male respondents declared that they would not be willing to give up their artistic aspirations for the sake of the family
- Female students find employment at art academies less attractive; employment at art university as a prospect for future career is evaluated as attractive by 47% of women and 66% of men. The gender gap in evaluation of this prospect increases between 1st and 5th (final) year students
- On average students do not see 'taking care of the family' as an attractive prospect for the future, and this evaluation applies as much to women as to men.
- Only 7% of female art students and 16% of male art students agreed with the statement that 'women should be prepared to cut down on paid work for the sake of a family'.
- Students generally tend to agree with the statement that 'men should take as much responsibility as women for home and children', even though more women (89%) tended to agree than men (78%)

## 2016 Gender bias in open source: Pull request acceptance of women versus men.

Terrell J, Kofink A, Middleton J, Raineart C, Murphy-Hill E, Parnin C. (2016)  
PeerJ PrePrints 4:e1733v1 <https://doi.org/10.7287/peerj.preprints.1733v1>

### Abstract

Biases against women in the workplace have been documented in a variety of studies. This paper presents the largest study to date on gender bias, where we compare acceptance rates of contributions from men versus women in an open source software community. Surprisingly, our results show that women's contributions tend to be accepted more often than men's. However, when a woman's gender is identifiable, they are rejected more often. Our results suggest that although women on GitHub may be more competent overall, bias against them exists nonetheless.

2015 Handley, I. M., Brown, E. R., Moss-Racusin, C. A., & Smith, J. L. (2015). **Quality of evidence revealing subtle gender biases in science is in the eye of the beholder**. *Proceedings of the National Academy of Sciences of the United States of America*, 112 (43), 13201-13206. URL <http://dx.doi.org/10.1073/pnas.1510649112>

#### *Abstract*

Scientists are trained to evaluate and interpret evidence without bias or subjectivity. Thus, growing evidence revealing a gender bias against women-or favoring men-within science, technology, engineering, and mathematics (STEM) settings is provocative and raises questions about the extent to which gender bias may contribute to women's underrepresentation within STEM fields. To the extent that research illustrating gender bias in STEM is viewed as convincing, the culture of science can begin to address the bias. However, are men and women equally receptive to this type of experimental evidence? This question was tested with three randomized, double-blind experiments-two involving samples from the general public ( $n = 205$  and  $303$ , respectively) and one involving a sample of university STEM and non-STEM faculty ( $n = 205$ ). In all experiments, participants read an actual journal abstract reporting gender bias in a STEM context (or an altered abstract reporting no gender bias in experiment 3) and evaluated the overall quality of the research. Results across experiments showed that men evaluate the gender-bias research less favorably than women, and, of concern, this gender difference was especially prominent among STEM faculty (experiment 2). These results suggest a relative reluctance among men, especially faculty men within STEM, to accept evidence of gender biases in STEM. This finding is problematic because broadening the participation of underrepresented people in STEM, including women, necessarily requires a widespread willingness (particularly by those in the majority) to acknowledge that bias exists before transformation is possible.



2015 Ceci, S. J., & Williams, W. M. (2015). Women have substantial advantage in STEM faculty hiring, except when competing against more-accomplished men. *Frontiers in psychology*, 6 . URL <http://dx.doi.org/10.3389/fpsyg.2015.01532>

#### Abstract

Audits of tenure-track hiring reveal faculty prefer to hire female applicants over males. However, audit data do not control for applicant quality, allowing some to argue women are hired at higher rates because they are more qualified. To test this, Williams and Ceci (2015) conducted an experiment demonstrating a preference for hiring women over identically-qualified men. While their findings are consistent with audits, they raise the specter that faculty may prefer women over even more-qualified men, a claim made recently. We evaluated this claim in the present study: 158 faculty ranked two men and one woman for a tenure-track-assistant professorship, and 94 faculty ranked two women and one man. In the former condition, the female applicant was slightly weaker than her two male competitors, although still strong; in the other condition the male applicant was slightly weaker than his two female competitors, although still strong. Faculty of both genders and in all fields preferred the more-qualified men over the slightly-less-qualified women, and they also preferred the stronger women over the slightly-less-qualified man. This suggests that preference for women among identically-qualified applicants found in experimental studies and in audits does not extend to women whose credentials are even slightly weaker than male counterparts. Thus these data give no support to the twin claims that weaker males are chosen over stronger females or weaker females are hired over stronger males.

2016 [Integrating and evaluating sex and gender in health research](#)

Suzanne Day, Robin Mason, Stephanie Lagosky and Paula A. Rochon  
Health Research Policy and Systems 2016 14:75

Published on: 10 October 2016

- [Full Text](#)
- [PDF](#)

## Abstract

Both sex (biological factors) and gender (socio-cultural factors) shape health. To produce the best possible health research evidence, it is essential to integrate sex and gender considerations throughout the research process. Despite growing recognition of the importance of these factors, progress towards sex and gender integration as standard practice has been both slow and uneven in health research. In this commentary, we examine the challenges of integrating sex and gender from the research perspective, as well as strategies that can be used by researchers, funders and journal editors to address these challenges. Barriers to the integration of sex and gender in health research include problems with inconsistent terminology, difficulties in applying the concepts of sex and gender, failure to recognise the impact of sex and gender, and challenges with data collection and datasets. We analyse these barriers as strategic points of intervention for improving the integration of sex and gender at all stages of the research process. To assess the relative success of these strategies in any given study, researchers, funders and journal editors would benefit from a tool to evaluate the quality of sex and gender integration in order to establish benchmarks in research excellence. These assessment tools are needed now amidst growing institutional recognition that both sex and gender are necessary elements for advancing the quality and utility of health research evidence.

## 2016 [A global call for action to include gender in research impact assessment](#)

Pavel V. Ovseiko, Trisha Greenhalgh, Paula Adam, Jonathan Grant, Saba Hinrichs-Krapels, Kathryn E. Graham, Pamela A. Valentine, Omar Sued, Omar F. Boukhris, Nada M. Al Olaqi, Idrees S. Al Rahbi, Anne-Maree Dowd, Sara Bice, Tamika L. Heiden, Michael D. Fischer, Sue Dopson...  
Health Research Policy and Systems 2016 14:50

Published on: 19 July 2016

- [Full Text](#)
- [PDF](#)

## Abstract

Global investment in biomedical research has grown significantly over the last decades, reaching approximately a quarter of a trillion US dollars in 2010. However, not all of this investment is distributed evenly by gender. It follows, arguably, that scarce research resources may not be optimally invested (by either not supporting the best science or by failing to investigate topics that benefit women and men equitably). Women across the world tend to be significantly underrepresented in research both as researchers and research participants, receive less research funding, and appear less frequently than men as authors on research publications. There is also some evidence that women are relatively disadvantaged as the beneficiaries of research, in terms of its health, societal and economic impacts. Historical gender biases may

have created a path dependency that means that the research system and the impacts of research are biased towards male researchers and male beneficiaries, making it inherently difficult (though not impossible) to eliminate gender bias. In this commentary, we – a group of scholars and practitioners from Africa, America, Asia and Europe – argue that gender-sensitive research impact assessment could become a force for good in moving science policy and practice towards gender equity. Research impact assessment is the multidisciplinary field of scientific inquiry that examines the research process to maximise scientific, societal and economic returns on investment in research. It encompasses many theoretical and methodological approaches that can be used to investigate gender bias and recommend actions for change to maximise research impact. We offer a set of recommendations to research funders, research institutions and research evaluators who conduct impact assessment on how to include and strengthen analysis of gender equity in research impact assessment and issue a global call for action.

## 2016 [Males Under-Estimate Academic Performance of Their Female Peers in Undergraduate Biology Classrooms](#)

Daniel Z. Grunspan, Sarah L. Eddy , Sara E. Brownell, Benjamin L. Wiggins, Alison J. Crowe, Steven M. Goodreau

Published: February 10, 2016

<http://dx.doi.org/10.1371/journal.pone.0148405>

### Abstract

Women who start college in one of the natural or physical sciences leave in greater proportions than their male peers. The reasons for this difference are complex, and one possible contributing factor is the social environment women experience in the classroom. Using social network analysis, we explore how gender influences the confidence that college-level biology students have in each other's mastery of biology. Results reveal that males are more likely than females to be named by peers as being knowledgeable about the course content. This effect increases as the term progresses, and persists even after controlling for class performance and outspokenness. The bias in nominations is specifically due to males over-nominating their male peers relative to their performance. The over-nomination of male peers is commensurate with an overestimation of male grades by 0.57 points on a 4 point grade scale, indicating a strong male bias among males when assessing their classmates. Females, in contrast, nominated equitably based on student performance rather than gender, suggesting they lacked gender biases in filling out these surveys. These trends persist across eleven surveys taken in three different iterations of the same Biology course. In every class, the most renowned students are

always male. This favoring of males by peers could influence student self-confidence, and thus persistence in this STEM discipline.

2017 Cognitive Difficulty and Format of Exams Predicts Gender and Socioeconomic Gaps in Exam Performance of Students in Introductory Biology Courses [Christian D. Wright](#), [Sarah L. Eddy](#), [Mary Pat Wenderoth](#), [Elizabeth Abshire](#), [Margaret Blankenbiller](#), and [Sara E. Brownell](#)  
<http://www.lifescied.org/content/15/2/ar23.full.pdf+html>

Recent reform efforts in undergraduate biology have recommended transforming course exams to test at more cognitively challenging levels, which may mean including more cognitively challenging and more constructed-response questions on assessments. However, changing the characteristics of exams could result in bias against historically underserved groups. In this study, we examined whether and to what extent the characteristics of instructor-generated tests impact the exam performance of male and female and middle/high- and low-socioeconomic status (SES) students enrolled in introductory biology courses. We collected exam scores for 4810 students from 87 unique exams taken across 3 yr of the introductory biology series at a large research university. We determined the median Bloom's level and the percentage of constructed-response questions for each exam. Despite controlling for prior academic ability in our models, we found that males and middle/high-SES students were disproportionately favored as the Bloom's level of exams increased. Additionally, middle/high-SES students were favored as the proportion of constructed-response questions on exams increased. Given that we controlled for prior academic ability, our findings do not likely reflect differences in academic ability level. We discuss possible explanations for our findings and how they might impact how we assess our students.

2017 Gender Gaps in Achievement and Participation in Multiple Introductory Biology Classrooms [Sarah L. Eddy](#), [Sara E. Brownell](#), [Mary Pat Wenderoth](#)  
<http://www.lifescied.org/content/13/3/478.abstract>

Although gender gaps have been a major concern in male-dominated science, technology, engineering, and mathematics disciplines such as physics and engineering, the numerical dominance of female students in biology has supported the assumption that gender disparities do not exist at the undergraduate level in life sciences. Using data from 23 large introductory biology classes for majors, we examine two measures of gender disparity in biology: academic achievement and participation in whole-class discussions. We found that females consistently underperform on exams compared with males with similar overall college grade point averages. In addition, although females on average represent 60% of the students in these courses, their voices make up less than 40% of those heard responding to instructor-posed questions to the class, one of the most common ways of engaging students in large lectures. Based on these data, we propose that, despite numerical dominance of females, gender disparities remain an issue in introductory biology classrooms. For student retention and achievement in biology to be truly merit based, we need to develop strategies to equalize the opportunities for students of different genders to practice the skills they need to excel.

**2007 "[Gender Equity: Strengthening the Physics Enterprise in Universities and National Laboratories](#)," Committee on the Status of Women in Physics, American Physical Society, 2007.**

Maintaining a strong workforce in the physical sciences is of critical importance to the national economy, health care, defense, and domestic security. Increasing the participation of women in these sciences can strengthen that workforce by widening the available pool of talent[1]. Despite the quite considerable increase in the number of female physics faculty over the past three decades, women still represent only 13% of faculty of all ranks from the 760 degree-granting physics departments in the United States[2] and only 9.5% across all ranks at the major research universities[3]. By contrast, all other disciplines measured except mechanical engineering are doing better than physics. If the nation is to enjoy the benefits of further significant increases in the participation of women in the physical sciences, the representation of women on the faculties of research universities must be increased. These women faculty play a critical role in the encouragement of women students.

Following the increase in accessibility to professional degrees that women have encountered since 1964, and the gradual reduction in barriers to obtaining science, technology and math employment for women, we have seen the percentage of PhD's awarded to women increase from 4% in 1974 to 18% in 2006[18]. At the same time, the percentage of assistant professors who are women in the top 50 physics departments has increased to 17.5%, which is currently on par with the representation of women in the relevant PhD pool.

Nevertheless, the physics workforce in academia and national laboratories remains one of the last areas in science where women are significantly under-represented relative to their proportion in the population. The reasons for this imbalance are many, as are the solutions, but the primary motivation for changing this situation should be to provide greater encouragement to women to enter and remain in physics. To ensure that both women and men are given equal opportunities in the field, physics departments and national laboratories, with the involvement of funding agencies, need to increase their commitment to clearing away existing barriers, encouraging women's participation in programs and their access to awards and grants, and to making academic and research environments respectful of all participants.

To help accelerate this trend of increasing participation, the Committee on the Status of Women in Physics (CSWP) of the American Physical Society (APS) followed the example of the chemistry community[4] by organizing a workshop to address this disparity entitled "Gender Equity: Strengthening the Physics Enterprise in Universities and National Laboratories." The event, co-funded by the National Science Foundation (NSF) and the Department of Energy (DOE), was held at APS headquarters in College Park, MD, on May 6-8, 2007. The major aim of the workshop was to facilitate a doubling of the number of women in physics in both academia and national laboratories over the next 15 years. The active participation of physics department chairs, national laboratory managers, and federal agencies encouraged exciting new ideas to emerge, aimed both at making the field of physics more attractive to women and men and at finding effective ways to retain women in physics. The workshop examined the underlying causes for the scarcity of women in physics, and participants formulated specific suggested action items that will improve the recruitment, retention, and promotion of female students, postdoctoral fellows, faculty, and scientists in academia and national laboratories.

The action items that emerged from the meeting are divided into: A. suggestions directed primarily at physics departments and national laboratories and, B. those directed to the funding agencies. If adopted, they are expected to lead to significant increases in the number of women physicists and improvements in the atmosphere and climate for faculty/scientists and students at all levels, regardless of gender. During the next six months, chairs and managers of all physics organizations are urged to commit to consider the recommendations carefully and to begin implementation of some of these items, especially those that will increase the number of women and help retain those women in their departments/laboratories. The interactive APS website is set up to facilitate the documentation of actions taken as well as the sharing of ideas with other chairs and managers. (The site is accessible from the Women in Physics page of the APS website, see Programs). A follow-up workshop is tentatively planned for 2009.

2016 [Author gender affects the rating of academic articles: Evidence from an incentivized, deception-free laboratory experiment.](#) Michał Krawczyk, Magdalena Smyk. *European Economic Review*, 2016 (doi: 10.1016/j.euroecorev.2016.02.017)

Even though women's position in academia has changed dramatically over the last few decades, there is still some evidence that when it comes to evaluation of scientific achievements, gender may play a significant role. Gender bias is particularly likely to take the form of statistical discrimination. In this study we sought to verify the hypothesis that researcher's gender affects evaluation of his or her work, especially in a field where women only represent a minority. Towards this end we asked a sample of subjects, mostly economics majors, to evaluate a paper written by mixed-gender couples, indicating that it was (co-)authored by a "female economist", "male economist", "young female economist" or "young male economist" or giving no information about the author at all. While age factor played no role, female authors appeared to be seen as less competent than males, in that subjects (being incentivized to give their best judgment) less often believed that their papers have been published. This effect did not interact strongly with the gender of the subject.

2017 [Are all researchers male? Gender misattributions in citations](#)  
Michał Krawczyk

(Note: link broken. Link to pubmed <https://pubmed.ncbi.nlm.nih.gov/28255187/>)

In this project I screen academic literature for cases of misattribution of cited author's gender. In English-language scientific publications such mistakes are found to be rare, partly because there is typically no need to attribute gender in the first place. By contrast, in master theses and doctoral dissertations (in social sciences) written in the Polish language, which typically requires gender attribution, more than 20% of female scholars are incorrectly cited as if they were men. In all my samples, mistakes involving males being cited as if they were women are dramatically less frequent, suggesting that gender misattributions are strongly shaped by the gender-science stereotype. The gender of the citing author and the field of study appear to have only limited effect.

2015 [Gender, beauty and support networks in academia: evidence from a field experiment](#)

Michał Krawczyk, Magdalena Smyk

Note: link broken new link <https://econpapers.repec.org/paper/warwpaper/2015-43.htm>



Bibliometric studies show that male academics are more productive than their female counterparts and that the gap cannot be explained in terms of difference in abilities. In this project we wish to verify the hypothesis that this tendency is related to the greater support that men receive from their colleagues (“old boys network”). Towards this end we had e-mails sent by a male or female student asking academics for a minor favour. In Study 1 we asked authors of nearly 300 papers in experimental economics to share the raw data used in their study. We observed no difference in response rate or compliance rate between male and female senders. In Study 2 we sent 2775 e-mails to academics affiliated with prestigious schools from ten different fields, asking to either send us a copy of their recent article or meet the sender supposedly interested in pursuing a PhD program. Once again we manipulated gender of the senders but this time we also varied their physical attractiveness. We found a small but significant difference in the Article Treatment: attractive females’ requests were honoured less often. No such tendency was found in the Meeting Treatment and no general gender effect was observed. Overall, we find very little support for the claim that early-stage male researchers enjoy greater support than their female colleagues.

**2001 Polish women in science: a bibliometric analysis of Polish science and its publications, 1980-1999 Berenika M Webster**  
***Research Evaluation*, 2001, vol. 10, issue 3, pages 185-194**

DOI: <https://doi.org/10.3152/147154401781776999>

**Abstract:** From Polish articles in the Science Citation Index (SCI), the level of women's productivity is compared to the number of Polish women scientists; their disciplines and favoured types of research are determined; their levels of international and domestic co-operation are measured, as are their publications in Polish and foreign languages.

**Conclusions:** It has been widely recognised that an analysis of the published outputs of scientists is a good indicator of their research activities, in terms of both volume and impact. In this paper it was demonstrated that bibliometric methods (including analysis of SCI) can be used successfully in analysing the outputs of women scientists relative to their male colleagues. This is an important development for policy makers, gender studies and sociology of science researchers alike as the position of women in science has been hotly discussed in the last couple of decades, many ‘affirmative’ actions have been proposed and implemented, but their results still fall short of expectations. Having another metrics — analysing women’s publication outputs — can be a valuable tool in mapping the current situation. **Poland is a good example of a country where women were encouraged to participate in science from early on and enjoyed social and economic privileges unknown to women in the West (e.g. affordable childcare and**



full employment). All this did not, however, produce equality of participation across disciplines. In some fields women achieved majority (e.g. biomedical research) but in others barely made any inroads (e.g. mathematics). Their science seems more parochial — published in local journals and produced without international cooperation — and their levels of outputs are lower than expected when compared with employment levels.

**2017 Nature Astronomy Focus: Gender equity in astronomy...** a number of articles relevant to astronomy & planetary science can be found here: [www.nature.com/genderequity](http://www.nature.com/genderequity) Please contact Nature Astronomy ([natureastro@nature.com](mailto:natureastro@nature.com)) if more info is needed.

**2017 Gender Representation in Russian Academic Journals Olga Krasnyak Underwood International College, Yonsei University, Seoul DOI:**

<https://doi.org/10.17323/727-0634-2017-15-4-617-628> (full access)

Krasnyak, O. (2017). Gender Representation in Russian Academic Journals. *The Journal of Social Policy Studies*, 15(4), 617-628.

<https://doi.org/https://doi.org/10.17323/727-0634-2017-15-4-617-628>

#### **ABSTRACT**

Representation of women in academic outputs is an important indicator of a country's gender equality. Starting in the 1950s, extensive scientific growth in the Soviet Union came with the establishment of a large number of academic institutions and journals. However, this massive rise in academic production has not been accompanied by an increase in equality between women and men in terms of publications; the sciences and the humanities remain dominated by men. This study focuses on gender disparity in domestic academic productivity. The availability of online archives and a long history of publications were crucial factors in choosing specific journals for this study. Collected data include the output statistics of the following journals: for humanities, *Questions of History* (1955–2013) and *Russian Literature* (1958–2014); for sciences, *Acoustical Physics* (1955–2014), *Mathematical Notes* (1967–2014), and *Biomedical*

Chemistry (1956–2014). In addition, a list of publications of the journal *Questions of Psychology* available in the period between 1980 and 1999 was also taken into account. The data show the percentage of female academic outputs and its changes through the decades, taking into account the socioeconomic, political, and historical background. A brief analysis of the scientific productivity reveals underrepresentation of women authored publications in mathematics (7 %), physics (11 %), and history (15 %). On the other hand, psychology (40 %), biochemistry (39 %), and literature (28 %) show better rates of gender equality. The article provides an explanation of this phenomena. During decades, a slight increase of women authored outputs gradually occurred in every scientific discipline, although this share was still low overall. The outcomes were compared with gender representation in sciences and humanities in other countries, which allows the conclusion that gender disparity in terms of the academic output in analysed Russian journals is not unique but follows global trends.

2015 Zigerell, L. J. "Is the gender citation gap in international relations driven by elite papers?." *Research & Politics* 2, no. 2 (2015): 2053168015585192.

#### Abstract

This paper reanalyses data from a recent widely-discussed study reporting that female-authored papers published in top international relations journals received fewer citations than equivalent male-authored papers. The reanalysis indicated that the gender citation gap is largely limited to elite papers, defined either as papers in the right tail of the citation distribution or as papers published in the most familiar journals. Results suggest that the original study's recommendation to consider the gender citation gap in promotion and review requires more data and a better understanding of the factors that influence whether a paper enters the discipline's elite.

2015 Fogarty, Brian J. "Comment on Zigerell (2015): Using Poisson inverse Gaussian regression on citation data." *Research & Politics* 2, no. 4 (2015): 2053168015617496.

#### Abstract

Zigerell's recent article in Research & Politics argues that Maliniak et al.'s findings that women are cited less than men in international relations are not robust to alternative specifications. Using Poisson inverse Gaussian (PIG) regression, in this comment, I demonstrate that both papers' findings are sensitive to empirical specifications. In many model specifications, women are cited less than men, but other specifications either show a null effect or that women are actually cited more than men in international relations. This illustrates that substantive model selections matter a great deal for the conclusions we can make from our data.

2014 Reuben, Ernesto, Paola Sapienza, and Luigi Zingales. "How stereotypes impair women's careers in science." *Proceedings of the National Academy of Sciences* 111.12 (2014): 4403-4408.

**Abstract:** Women outnumber men in undergraduate enrollments, but they are much less likely than men to major in mathematics or science or to choose a profession in these fields. This outcome often is attributed to the effects of negative sex-based stereotypes. We studied the effect of such stereotypes in an experimental market, where subjects were hired to perform an arithmetic task that, on average, both genders perform equally well. We find that without any information other than a candidate's appearance (which makes sex clear), both male and female subjects are twice more likely to hire a man than a woman. The discrimination survives if performance on the arithmetic task is self-reported, because men tend to boast about their performance, whereas women generally underreport it. The discrimination is reduced, but not eliminated, by providing full information about previous performance on the task. By using the Implicit Association Test, we show that implicit stereotypes are responsible for the initial average bias in sex-related beliefs and for a bias in updating expectations when performance information is self-reported. That is, employers biased against women are less likely to take into account the fact that men, on average, boast more than women about their future performance, leading to suboptimal hiring choices that remain biased in favor of men.

2018 Ooms, Ward, Claudia Werker, and Christian Hopp. "Moving up the ladder: heterogeneity influencing academic careers through research orientation, gender, and mentors." *Studies in Higher Education* (2018): 1-22.

**Abstract:** We look into the question whether heterogeneity stemming from research orientation, gender, or disciplinary and cultural differences with their PhD supervisors helps or hampers academics' careers. Based on a sample of 248 academics at two leading European universities of technology, we combine multinomial logit models and sequential logit models to understand career advancement. Our results show that heterogeneity stemming from research orientation is helpful. Academics who bridge between the quest for fundamental understanding and socio-economic relevance attain career success. Yet heterogeneity stemming from gender hinders careers: female academics face problems securing tenured positions and full professorships. Mentor–mentee heterogeneity only helps in early career transitions, but hampers advancement later on. Our insights offer suggestions to policymakers, university managers, and academics, because they help to identify promising academics, the right support for sitting staff members, measures correcting for gender imbalances, and can inform strategic choices regarding research orientation and PhD supervisors.

2020 Gender Patterns of Publication in Top Sociological Journals [Aliakbar](#)

[Akbaritabar](#), [Flaminio Squazzoni](#) First Published July 20, 2020

Research Article

<https://doi-org.proxy.cc.uic.edu/10.1177/0162243920941588>

This article examines publication patterns over the last seventy years from the *American Sociological Review* and *American Journal of Sociology*, the two most prominent journals in sociology. We reconstructed the gender of all published authors and each author's academic pedigree. Results would suggest that these journals published disproportionately more articles by male authors and their coauthors. These gender inequalities persisted even when considering citations and after controlling for the influence of academic affiliation. It would seem that the potentially positive advantage of working in a prestigious, elite sociology department, in terms of better learning environment and reputational signal, for higher publication opportunities only significantly benefits male authors. While our findings do not mean that these journals have biased internal policies or implicit practices, this publication pattern needs to be considered especially regarding the possibility of their "social closure" and isomorphism.