

## Case Studies in the Environment: an Analysis of Author, Editor, and Case Characteristics

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**ABSTRACT** Who and what academic journals publish reflects and affects the broader social context in which they are embedded. *Case Studies in the Environment (CSE)* is a new peer-reviewed journal developed by UC Press due to the growing interest in environmental studies and the increasing use of case studies in teaching at all levels. This paper examines the gender and geographic distribution of authors and editors during *CSE*'s first year of publication, the geographic distribution of the case studies, and attitudes of authors regarding the journal's purpose, format, and use in teaching. While studies of many journals reveal a predominance of male authors, women authors slightly outnumber men in *CSE*. Large majorities of the authors and editors are based at United States institutions and >90% are located in industrialized countries. Approximately half of the published articles present case studies from the US and nearly 75% are from industrialized countries. Authors reported being generally pleased with the purpose, format, and publishing logistics of the new journal.

This article examines the gender, geographic, and institutional distribution of authors and editors in the journal *Case Studies in the Environment (CSE)* during its first year, as well as the geographic locations of published case studies and author attitudes regarding the journal. This paper does so in the spirit of productive self-reflection (the authors are members of *CSE*'s editorial board and UC Press staff provided research assistance) to provide comparison data for similar studies and to gather information that might assist *CSE* improve intellectually, instrumentally, and avoid the potentially biased publication patterns found in other literature.

*CSE*'s stated purpose is "to inform faculty, students, researchers, educators, professionals, and policymakers on case studies and best practices in the environmental sciences and studies," [1] which is critical given the growth of these fields. The number of undergraduate degree programs in environmental or sustainability subjects in the US increased by 57% between 2008 and 2012, Master's degree programs increased by 68%, and doctoral programs increased by 35% [2]. In US, well over 800 institutions now offer a Bachelor's degree in Environmental Science [3] and the number of stu-

dents receiving Master's degrees within the Education Department's "Agriculture and Natural Resources" category increased by 44% from 2005 to 2016 [4]. At the high school level, the Environmental Science Advanced Placement (AP) course, offered for the first time in 1998, now ranks 13<sup>th</sup> among the 38 AP exams [5]. A total of 52,416 students took the exam in 2007, 138,703 in 2015, and 159,578 in 2017 [6]. Given the widespread interest in environmental studies and the use of case studies in higher education [7], *CSE* will likely become an increasingly important resource.

### STUDY CONTEXT

Publishing in peer-reviewed journals helps scholars gain credibility, distinction, and visibility, thus significantly increasing opportunities for employment and advancement [8]. Yet many studies reveal uneven and potentially biased publication patterns and uses of scholarly literature. Perhaps in the broadest study, an analysis of 36 million authors from more than 100 countries published from 2002 to 2016 in 6,000 journals covering STEM disciplines (science, technology, engineering, mathematics, and medicine) found far more male authors than women

and that the journals had invited men to submit papers at approximately double the rate of women [9]. A 2013 study found that women comprised only 22% of authors on more than 1.8 million scholarly publications in a search of the JSTOR database [10].

In 2010 and 2011, women comprised only 14% of the editors of *Nature*, one of the world's most prestigious science journals, 17% of the authors of biology and chemistry articles, 8% of physical science articles, and 4% of environmental science articles, despite much higher percentages of female researchers in these disciplines [11]. Women comprised only 37% of the authors of agriculture, biology, and environmental science articles in 36 Spanish science journals from 1998 to 2008 [12]. Several studies of medical journals show a significant underrepresentation of female authors [13], including the prestigious first or last author positions (prestige positions can vary across disciplines) [14].

Studies of the social sciences and humanities also show systematic under-representation of women, including authors in key literature within communication, economics, international relations, law, and peace and justice studies [15]. In political science, despite women accounting for 40% of doctorates in the US, a recent 15-year study found women authors on only 18% of articles in the *American Journal of Political Science* and 23% in the *American Political Science Review*, two of field's most prestigious journals [16]. From 1999 to 2004, women represented 21% of authors in eight top political science journals [17]. We are unaware of studies looking at gender representation within the field of education, though given the predominance of women within the field it may provide a counter example.

Fewer articles examine the geographic distribution among authors in leading English language journals. However, studies of the top marketing journals [18], key US journals in information science and technology [19], a new environmental studies journal [20], and the Intergovernmental Panel on Climate Change (IPCC)'s Fifth Assessment Report (AR5) [21] have found far more authors from North America and Western Europe than the global south.

Under-representation of women authors in scholarly journals is a potential contributing factor to women receiving fewer post-docs, tenure-track jobs, and tenure in a variety of academic fields despite graduating from relevant Ph.D. programs in near equal numbers as men [10].

A 2013 study found that women earn approximately half of the doctorate science degrees in the US, but account for only 21% of full professors in the corresponding field [22]. Male STEM graduates gain employment at twice the rate of their female counterparts [23] and women holding STEM positions earn an average of 14% less than do men in the same positions [24].

Unequal publication rates may create or reinforce other patterns. For example, a 2014 study found that more male authors and authors from industrialized countries received formal peer reviews for publication in a leading science and technology journal than did female and non-Western authors [19]. In US, male scholars of international relations are more likely to assign articles written by men than by women [25], and American authors more than non-Americans [26]. A 2017 study found that the leading earth science and space science journals invited women to serve as peer reviewers and editors at disproportionately lower rates than men [27].

## METHODS

This paper examines the gender, geographic, and institutional affiliation of *CSE* authors, editors, and editorial board members through 15 July 2018, as well as the geographic distribution of published case studies and author attitudes regarding the journal. The *CSE* website lists all authors and the institutions with which they were associated at the time of submission as well as all editors and editorial board members and their home institutions. Rather than make assumptions concerning author gender based on the names alone, we conducted internet searches for institutional home pages or other sites that contained specific mentions of a person's gender. *CSE*'s list of editors includes pictures and biographies and we conducted internet searches to confirm the gender of editorial board members.

With respect to geographic distribution, we examined the institutional affiliation of authors, editors, and editorial board members as listed on the *CSE* website, rather than their country of birth or current citizenship. When the journal listed affiliations with more than one institution for a particular person, we conducted internet searches to assign one as primary. We examined the abstract of each article, and sometimes its contents, to determine the country location of each case study. We also examined the regional distribution of authors, editors, and case studies using the United Nation (UN) regional group

divisions: Africa; Asia and the Pacific; Eastern Europe; Latin America and the Caribbean (GRULAC); and Western Europe and Others (WEOG)—which includes US, Canada, Australia, and New Zealand. This division is different than the one used by *CSE* on its website. We also examined distributions among industrialized/developed and developing countries, using standard, albeit imperfect, definitions including the Group of 77’s list of self-identifying developing countries [28].

For the author survey, UC Press provided email addresses for the corresponding author of each article and we conducted internet searches for potential additional addresses for these authors and for all co-authors. Survey questions gathered information regarding why authors submitted to the journal, how they used its contents, their experience with the submission and publication processes, and basic demographic data based on questions developed by the US Census. We fielded the survey on 3 May 2018 and closed it on 3 August 2018. We sent three reminders to potential respondents to increase the response rate.

## RESULTS

As of 15 July 2018, *CSE* had published 61 articles with 127 authors from 13 different countries. Single authors wrote 28 of these articles. Two individuals, one man and one woman, each wrote three articles. We counted these authors as separate individuals since there were different articles. At that time, *CSE* had 15 editors from four different countries. The editorial board had 32 members residing in five different countries.

### *Author Gender, Geographic, and Institutional Type*

About 67 (53%) of the 127 authors are women (Table 1). While authors work at institutions in 13 different countries (Table 2), most of them are from the US, and geographic diversity decreases even more when we combine US authors with those from other advanced industrialized countries. As shown in Tables 3–8, about 58% of *CSE* authors to date are from the US; 72% from the US or Canada; 78% from the US, Canada, or Western Europe; and an overwhelming 95% from the US, Canada, Western Europe, Australia, or New Zealand—the UN regional groups WEOG. Only seven authors, or about 5%, are based in a developing country. Even when one examines Australia and New Zealand separately from WEOG (Table 9) on the premise that they are also Pacific countries, only 22% of authors are not from the US, Canada, or Western Europe.

**TABLE 1.** Gender of authors.

	Male	Female	Total
Authors	60	67	127
	47.2%	52.8%	100%

**TABLE 2.** Country (location of home institution at the time of publication) of authors.

Country of home institution	Number of authors
Australia	13
Brazil	2
Canada	18
Germany	1
Ecuador	1
Myanmar	1
New Zealand	8
Norway	1
Panama	1
Spain	1
South Africa	2
United Kingdom	4
United States	74
<b>Total</b>	<b>127</b>

**TABLE 3.** Author distribution: US-based vs. non-US based.

US authors	Non-US authors	Total
74	53	127
58.3%	41.7%	100%

**TABLE 4.** Author distribution: US and Canada based.

US and Canada	Non-US and Canada	Total
92	35	127
72.4%	27.6%	100%

Regarding institutional type (Table 9), a large but not surprising majority of *CSE* authors, 102 of 127 or about 80%, work at colleges or universities. Others submitted while working at environmental organizations, non-profit research institutions, for-profit companies, and government agencies [29].

**TABLE 5.** Authors: US, Canada, and Western Europe vs. other.

US, Canada, and Western Europe	Non-US, Canada, and Western Europe	Total
99	28	127
78.0%	22.0%	100%

**TABLE 6.** Authors: US, Canada, Western Europe, Australia, and New Zealand WEOG vs. others.

US, Canada, Western Europe, Australia, and New Zealand	Non-US, Canada, Western Europe, Australia, and New Zealand	Total
120	7	127
94.5%	5.5%	100%

**TABLE 7.** Authors: industrialized vs. developing countries.

Industrialized countries (which comprises WEOG)	Developing countries	Total
120	7	127
94.5%	5.5%	100%

*Editors and Editorial Board*

Women comprise 10 of the 15 *CSE* editors. The editorial board, which has far less impact on content, includes 16 men and 16 women. Thus, women hold 26 (55%) of the 47 editor and editorial board positions (compared to

about 54% of the authors). Individuals from seven different countries serve as editors or members of the editorial board (Table 10). As with *CSE* authors, however, the vast majority is based in the US or other industrialized countries. About 10 of the 15 editors (66.7%) and 28 of the 32 members of the editorial board (87.5%) are US-based. About 14 of the 15 editors (93.3%) and 30 of the 32 editorial board members (93.8%) are from industrialized countries. No editors and editorial board members come from Africa or Eastern Europe; only two are from GRULAC; and just one from Asia-Pacific.

*Case Study Location*

Of the first 61 articles published in *CSE*, we classified 59 as case studies and 2 as essays about case studies. The cases were drawn from 18 different countries, one international institution (World Bank), and one global commodity life cycle (rare earth metals). About 27 of the 59 cases, or a little less than half, are from the US. Yet, while far more cases than authors are based outside the US, as shown in Tables 11–14, the vast majority of articles examine cases located in the US and other industrialized countries. Only 13 cases are from developing countries, although the articles on the World Bank and rare earth metals discuss developing countries extensively.

*Author Survey*

We fielded an online survey to gain more information about the authors (the target population), why they submitted, the source of their content, how they leverage

**TABLE 8.** Authors: regional group distribution—with Australia and New Zealand separated.

Africa	Asia and Pacific	Australia and New Zealand	Eastern Europe	L.A. and Caribbean	WEOG w/o Australia and New Zealand	Total
2	1	21	0	4	99	127
1.6%	0.8%	16.5%	0%	3.1%	78.0%	100%

**TABLE 9.** Authors: institutional type.

College or University	Environmental organization or non-profit research institution	Company	Government	Total
102	14	6	5	127
80.3%	11.0%	4.7%	4%	100%
58 different Schools	11 different institutions	4 different companies	4 different agencies	

**TABLE 10.** Country (location of home institution) of editors and editorial board.

	Australia	China	Germany	Mexico	New Zealand	U.K.	United States	Total
Editors	1			1	3		10	15
Editorial board		1	1	1		1	28	32
	1	1	1	2	3	1	38	45

**TABLE 11.** Case location.

Location	Number of cases
Argentina	1
Australia	3
Belgium	1
Brazil	1
Canada	7
Costa Rica	1
Ecuador	1
India	1
Indonesia	1
Myanmar	1
Nepal	3
New Zealand	4
Panama	1
Peru	1
South Africa	1
Spain	1
United Kingdom	1
United States	27
International Institution	1
Product Life Cycle	1
<b>Total</b>	<b>59</b>

**TABLE 12.** Case location: US, Canada, and Western Europe vs. others.

US, Canada, or Western Europe	Non-US, Canada, or Western Europe	Others	Total
37	20	2	59
62.7%	33.9%	3.4%	100%

their publication(s) professionally, and their experience with the publication and review process. The response rate was poor, about 26%, which yield an *n* of 33, though not all respondents answered each question (see Appendix A for full topline).

About 56% of respondents identified as female and 44% identified as male. 61% reported being under 44 years old. 81% declared themselves white/Caucasian, 19% Asian/Pacific Islander, 15% Hispanic/Latino, and 4% Black/African American, unsurprisingly, the sample was highly educated, with 79% holding a Ph.D.

The authors reported being highly satisfied with their experience submitting to the journal. 94% stated that they would submit a manuscript again and 90% stated that they would recommend publishing in *CSE* to others. 91% reported basing the article on their own research and everyone said they listed their *CSE* publication on their list of peer-reviewed publications. Typical for academic journals, many of the authors reported that *CSE* also asked them to serve as reviewers. Although only 21% responded that they had served as reviewers, those that did report either having a very positive (43%) or somewhat positive (57%) experience doing so. While not subjected to formal content analysis, the open-ended comments were largely positive, including mention of the value the journal had within environmental studies pedagogy.

## DISCUSSION AND CONCLUSION

*CSE*'s focus on environmental case studies is critical given the importance of the field and the value of case studies in teaching and research. Its choice to exist only online while conforming to stringent peer review standards sets a positive ecological example, even when one acknowledges the legitimate equity concerns regarding online access and the pay-wall protection for some articles, which could inhibit submissions from developing country authors. For these reasons and the positive feedback provided *via* the author's survey (albeit not a definitive representation), we conclude that the journal is off to a promising start and deserves support.

While quality and blind peer review must guide what gets published in *CSE* and all other scholarly journals, examining author gender and geographic distributions and case study location can help avoid unintended bias

**TABLE 13.** Case location: regional group distribution—with Australia and New Zealand separated.

Africa	Asia and Pacific	Australia and New Zealand	Eastern Europe	L.A. and Caribbean	WEOG w/o Australia and New Zealand	Others	Total
1	6	7	0	6	37	2	59
1.7%	10.2%	11.9%	0%	10.2%	62.7%	3.4%	100%

**TABLE 14.** Case location: developed vs. developing country location.

Developed	Developing	Others	Total
44	10	2	59
74.6%	22%	3.4%	100%

and/or expose unexplored opportunities. Indeed, a new multi-disciplinary journal focused on environmental cases would likely benefit intellectually, contribute more to the field, and gain readership if it publishes a diverse set of authors, from different countries, writing on a variety of cases, located in a range of locations.

The slight majority (53%) of female authors published during *CSE*'s first year distinguishes it from the pattern found in many journals and fields. Yet given the disparities in other aspects of academia and the existence of potential systemic biases, reasons exist for *CSE* to encourage submissions from female authors, particularly as interest in the journal expands and submissions increase. This could include targeted networking by the editorial board and outreach to organizations such as the Association for Women in Science, Society of Women Environmental Professionals, Women in Earth and Environmental Science Australasia, and North American Association for Environmental Education. Indeed, a recent comprehensive study concluded that the STEM gender gap will not close without targeted efforts in education, mentoring, and academic publishing [9]. *CSE*'s majority female roster of editors is thus commendable from this perspective.

Since UC press publishes *CSE*, it is not surprising that most authors are US-based. Nor is the fact that other English speaking countries contribute the majority of other authors, especially Canada (whose scholars can easily access US-based academic conferences), Australia, and New Zealand.

That said, *CSE* authors are overwhelmingly based in industrialized countries, with 87% from Australia, Canada, New Zealand, Western Europe, and the US. So

are the case studies themselves, with only 25% examining cases from developing countries. *CSE* would benefit by encouraging more submissions about cases and from authors based in developing countries. Once published, these cases and authors would likely increase readership across disciplines and countries, grow the citation of *CSE* articles, and expand the use of *CSE* articles in both graduate and undergraduate classes. While admirably gender-balanced, 38 of *CSE*'s editors and editorial board members are US-based, which is something that the journal can address without affecting quality. Diversifying the geographic distribution of its leadership team could enhance *CSE*'s ability to encourage more submissions from other regions. The journal could also consider calling for paired or groups of articles that examine the same issue in multiple locations, or different issues within a particular developing country or region.

In its first year, only two articles focused exclusively on case study pedagogy and only a few included teaching materials. Given that such articles are part of its stated purpose, *CSE* might benefit from actively recruiting more articles on the creation, use, strengths, and weakness of case-based research and teaching in environmental studies, and/or more case studies that accompanied by teaching slides, notes, or plans.

As the journal moves forward, *CSE* might wish to examine who submits to the journal compared to who gets published to deepen its awareness of gender and geographic distributions. It is always advisable to reflect actively on opportunities that a journal creates as well as the potential biases it might unknowingly reinforce. *CSE*'s willingness to engage in self-reflection at 1 year is a promising start and a model for other journals committed to equity and inclusion.

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research assistance. Readers should view our findings regarding author and editor characteristics and case location as close approximations rather than precise data points. While we worked diligently to record the relevant information accurately, we understand that our categories are not perfect, others might make different distinctions or gather different information and that minor counting or other errors could exist.

### AUTHOR CONTRIBUTIONS

DD wrote the first draft of the Study Context and Results sections and the corresponding elements of the Methods and the Discussion and Conclusion sections. JB wrote the first draft of the Author Survey section, Appendix A, and the corresponding elements of the Methods and the Discussion and Conclusion sections. JB worked with UC Press to obtain contact details for the lead authors and other information. DD and student research assistants gathered contact details for co-authors.

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### COMPETING INTERESTS

The authors have declared that no competing interests exist.

### APPENDIX A: CASE STUDIES IN THE ENVIRONMENT AUTHOR SURVEY

#### Fielding

Direct email to all authors ( $n = x$ ), 5/23/18–6/8/18; 7/7/10–8/3/18; three reminders.

Survey programmed *via* Google Forms;  $n = 33$ .

#### Exempt Approval

5/21/18 USC IRB UP-18-00305.

Would you submit a manuscript to the journal again? ( $n = 32$ )

Yes	94%
Maybe	6%
No	0%

Is your published article based on research that you have done? ( $n = 33$ )

Yes	91%
No	9%

Would you recommend others to publish in the journal? ( $n = 30$ )

Yes	90%
Maybe	7%
[Other]	3%

Was the length limitation (approximately 3–4,000 words per article) appropriate? ( $n = 29$ )

Yes	79%
Prefer longer	17%
Prefer shorter	3%
[Other]	3%

Do you include the article in your list of peer-reviewed publications? ( $n = 30$ )

Yes	100%
No	0%

Have you reviewed one or more articles for *CSE*? ( $n = 33$ )

Yes	21%
No	79%

If you HAVE reviewed one or more articles for *CSE*, please rate your experience ( $n = 7$ )

Very positive	43%
Somewhat positive	57%
Both positive and negative or neutral	0%
Somewhat negative	0%
Very negative	0%

Why did you decide to submit to Case Studies in the Environment? ( $n = 25$ )

- A board member/friend recommended it.
- A good publication venue for a short article.
- Because my work fit the scope of the magazine.
- Good opportunity for short peer-reviewed publication and I liked the teaching focus.
- I believed I had an interesting case to present, and like the pedagogical approach.

- I consulted with the editor if my paper would fit the journal.
- I knew some of the editors.
- I knew Wil Burns; I trusted any project.
- I saw an announcement.
- I submitted because the idea was timely and innovative, and in my opinion the journal fills an important gap.
- I wanted to share the story to give others an opportunity to learn from it.
- I was interested in creating teaching material.
- Interesting site to see conservation problems all over the world.
- Invitation from the editor and availability of material.
- Invited to collaborate on a commentary piece with one of *CSE*'s section editors.
- It was a good fit for my paper.
- It was a good fit for my work.
- It was selected by a co-author at the recommendation of a colleague who is involved in editorial responsibilities at the journal.
- It would be a good platform to present my research paper in concise form to a wider audience.
- My research topic lent itself better to a case study than a broader scientific article.
- Needed a vehicle for a long-format case study.
- Relevant special issue.
- The journal was aligned with my topic of research.
- To share an interesting case study that coauthors and I had previously prepared for the classroom.
- To share our findings with a wider audience.

Any additional comments? ( $n = 7$ )

- All my experiences with *CSE* have been positive. Keep up the good work!
- I think it is a great journal that definitely fills a needed gap in environmental studies!
- I think this journal provides a valuable venue for pedagogical publication. I will likely submit here again.
- I am disappointed that reading my article requires a subscription login. I thought it was going to be open access for anybody to read. Bummer.
- In my case, the manuscript was broken into three parts. In my opinion, that should not be necessary

for an online publication. We need a place to post long-format, integrated and comprehensive case studies.

- Keep up the great work!
- This journal provides a niche needed in academia. I hope that the journal will be more popular in the future.

## DEMOGRAPHICS

What is your age? ( $n = 25$ )

18–24	0%
25–34	35%
35–44	26%
45–54	16%
55–64	19%
65+	3%

What is your gender? ( $n = 32$ )

Female	56%
Male	44%

What is your race/ethnicity? ( $n = 27$ )

White/Caucasian	81%
Black/African American	4%
Hispanic/Latino	15%
Asian/Pacific Islander	19%

What is your highest level of education? ( $n = 33$ )

Bachelors	0%
Masters	21%
Ph.D.	79%

## REFERENCES

1. *Case Studies in the Environment*. Available: <http://cse.ucpress.edu/>. Accessed 4 July 2017.
2. Vincent S, Bunn S, Stevens S. Interdisciplinary Environmental and Sustainability Education: Results from the 2012 Census of U.S. Four Year Colleges and Universities. Washington, D.C.: National Council for Science and the Environment; 2012.
3. Environmental Science Degree. EnvironmentalScience.org. 2018. Available: [www.environmentalscience.org/degree](http://www.environmentalscience.org/degree). Accessed 14 June 2018.
4. US Department of Education. Master's Degrees Conferred by Postsecondary Institutions, by Field of Study:

Selected Years, 1970-71 through 2015-16. National Center for Education Statistics; 2017. Available: [https://nces.ed.gov/programs/digest/d17/tables/dt17\\_323.10.asp](https://nces.ed.gov/programs/digest/d17/tables/dt17_323.10.asp). Accessed 14 June 2018.

5. AP Student Score Distributions. College Board. 2018. Available: <https://apscore.collegeboard.org/scores/about-apscores/score-distributions/>. Accessed 14 June 2018.

6. Ibid. College Board. Program Summary Report. College Board. 2015. Available: <https://secure-media.collegeboard.org/digitalServices/pdf/research/2015/Program-Summary-Report-2015.pdf>. Accessed 14 June 2018.

7. Bonney K. Case study teaching method improves student performance and perceptions of learning gains. *J Microbiol Biol Educ*. 2015;16(1): 21-28., see references 4-7, 9, 11-17, 21, 22 and 24. Herreid CF. Case study teaching. *New Dir Teach Learn*. 2011: 31-40. doi:10.1002/tl.466. Yadav A, Lundeborg M, DeSchryver M et al. Teaching science with case studies: a national survey of faculty perceptions of the benefits and challenges of using cases. *J Coll Sci Teach*. 2007;37(1): 34.

8. For discussion, see: Perez-Porro A. Why women drop out of science careers. *Sci Am*. 2017. Wasserman H, Richards I. On the factory floor of the knowledge production plant: editors' perspectives on publishing in academic journals. *Crit Arts*. 2015;29(6): 725-745. Bartowski JP, Deem CS, Ellison CG. Publishing in academic journals: strategic advice for doctoral students and academic mentors. *Am Sociologist*. 2015;46(1): 99-115. Totosy de Zepetnek S, Jia J. Electronic journals, prestige, and the economics of academic journal publishing. *Comp Lit Cult*. 2014;16(1): 1-13.

9. Holman L, Stuart-Fox D, Hauser CE. The gender gap in science: how long until women are equally represented? *PLoS Biol*. 2018;16(4): e2004956. doi:10.1371/journal.pbio.2004956.

10. West J, Jacques J, King M, Correll S, Bergstrom C. The role of gender in scholarly authorship. *PLoS One*. 2013;8: 1-6.

11. Conley D, Stadmark J. Gender matters: a call to commission more women writers. *Nature*. 2012;488(7413): 590. These figures have been rounded to the nearest whole number.

12. Mauleon E, Hilan L, Moreno L, Gomez I, Bordons M. Assessing gender balance among journal authors and editorial board members. *Scientometrics*. 2013;95(1): 87-114.

13. Dubey D, Sawhney A, Atluru A, Amritphale A, Dubey A, Trivedi J. Trends in authorship based on gender and nationality in published neuroscience literature. *Neurol India*. 2016;64(1): 97-100. Dotson B. Women as authors in the pharmacy literature: 1989-2009. *Am J Health Syst Pharm*. 2011;68(18): 1736-1739. Shields L, Hall J, Mamun AA. The 'gender gap' in authorship in nursing literature. *J R Soc Med*. 2011;104(11): 457-464.

14. Dotson B. Women as authors in the pharmacy literature: 1989-2009. *Am J Health Syst Pharm*. 2011;68(18): 1736-1739. Feramisco JD, Leitenberger JJ, Redfern SI, Bian A, Xie XJ. A gender gap in the dermatology literature? Cross-sectional analysis of manuscript authorship trends in dermatology journals during 3 decades. *J Am Acad Dermatol*. 2009;60:

63-69. Sidhu R, Rajashekhar P, Lavin VL, Parry J, Attwood J. The gender imbalance in academic medicine: a study of female authorship in the United Kingdom. *J R Soc Med*. 2009;102: 337-342. Jaggi R, Guancial EA, Worobey CC et al. The "gender gap" in authorship of academic medical literature: a 35-year perspective. *N Engl J Med*. 2006;355: 281-287.

15. Knobloch-Westerwick S, Glynn CJ. The Matilda effect – role congruity effects on scholarly communication. *Communic Res*. 2013;40(1): 3-26. Maliniak D, Powers R, Walter BF. The gender citation gap in international relations. *Int Organiz*. 2013;67(4): 889-922. Williams H, Bates S, Jenkins L, Luke D, Rogers K. Gender and journal authorship: an assessment of articles published by women in three top British political science and international relations journals. *Eur Polit Sci*. 2015;14(2): 116-130. Ostby G, Strand H, Nordas R, Gleditsch NP. Gender gap or gender bias in peace research? Publication patterns and citation rates for *Journal of Peace Research*, 1983-2008. *Int Stud Perspect*. 2013;14(4): 493-506. Durant LV. Gender bias and the legal profession: a discussion of why there are still so few women on the bench. *University of Maryland Law Journal of Race, Religion, Gender, and Class*. 2004;4(1): 181-205. Boschini A, Sjogren A. Is team formation gender neutral? Evidence from co-authorship patterns. *J Labor Econ*. 2007;25: 325-365.

16. Teele DL, Thelen K. Some of the Top Political Science Journals Are Biased Against Women: Here's the Evidence. *The Washington Post*; 30 May 2017. Available: [https://www.washingtonpost.com/news/monkey-cage/wp/2017/05/30/some-of-the-top-political-science-journals-are-biased-against-women-heres-the-evidence/?noredirect=on&utm\\_term=.7852e9688b7b](https://www.washingtonpost.com/news/monkey-cage/wp/2017/05/30/some-of-the-top-political-science-journals-are-biased-against-women-heres-the-evidence/?noredirect=on&utm_term=.7852e9688b7b). Accessed 26 July 2018.

17. Breuning M, Sanders K. Gender and journal authorship in eight prestigious political science journals. *PS: Polit Sci Polit*. 2007;40: 347-351.

18. Polonsky MJ, Garma R, Mittelstaedt JD. An examination of the globalization of authorship in publishing in 20 leading marketing journals. *Eur Bus Rev*. 2006;18(6): 437-456.

19. Demarest B, Freeman G, Sugimoto CR. The reviewer in the mirror: examining gendered and ethnicized notions of reciprocity in peer review. *Scientometrics*. 2014;101(1): 717-735.

20. Downie D, Chinal A, Fritz R, Intemann N, Urbanowski K. The first six years of CSE: categorizing authors and topics. *J Environ Stud Sci*. 2017: doi:10.1007/s13412-017-0448-3.

21. Corbera E, Calvet-Mir L, Hughes H, Paterson M. Patterns of authorship in the IPCC Working Group III report. *Nat Clim Change*. 2015;6(1): 94-99.

22. Shen H. Inequality quantified: mind the gender gap. *Nature*. 2013;495(7439): 22-24. An earlier study found similar results: West M, Curtics J. AAUP Faculty Gender Equity Indicators 2006. Washington, D.C.: American Association of University Professors; 2006.

23. Landivar LC. Disparities in STEM employment by sex, race, and Hispanic origin. *United States Census Bureau: American Community Survey Reports*. 2013;24(1): 1-25.

24. Buckley HL, Sciligo AR, Adair KL, Case BS, Monks JM. Is there gender bias in reviewer selection and publication success rates for the New Zealand Journal of Ecology? *N Z J Ecol.* 2014;38(2): 1–5.
25. Colgan J. Gender bias in international relations graduate education? New evidence from Syllabi. *PS: Polit Sci Polit.* 2017;50(2): 456–460.
26. Peterson S, Tierney MJ, Maliniak D. Inside the Ivory Tower. *Foreign Policy.* 2005;151: 58–64.
27. Lerback J, Hanson B. Journals invite too few women to referee. *Nature.* 2017;541: 455–457.
28. The Group of 77. The Member States of the Group of 77. The Group of 77 at the United Nations. Available: <http://www.g77.org/doc/members.html>. Accessed 11 November 2017.
29. Government Agencies: Commonwealth Scientific & Industry Research Organization; New Jersey Division of Fish and Wildlife; US Department of Agriculture – VT; US Forest Service; Seattle City Council; Environmental Advocacy and/or Non-profit Research Organizations: Bear Trust International; Catalina Island Marine Institute; Community Association of S. Indian Lake; Embark; Environmental Justice Coalition for Water; Friends of Wildlife; Fishermen’s Association; Greening Australia; National Socio-Environmental Synthesis Center; Pro Forest Foundation; Smithsonian Conservation Biology Institute. Companies: Company: Althouse and Mead; First Solar 3; Independent Communications Contractor; Landcare Research.