RESEARCH NOTE

Women as editors-in-chief of environmental science journals

[version 1; peer review: 2 approved with reservations]

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First published: 21 Jul 2017, 6:1167
https://doi.org/10.12688/f1000research.11661.1

Abstract
This research note describes an analysis regarding the role of women as editors-in-chief of environmental science journals. The list of journals analyzed was obtained from the database of "Web of Science", published in 2015. This database does not include information on the name or gender of the editors-in-chief of journals, so a web search was performed. The results show that gender inequality is present in this important field of science. Causes of this bias merit more and profound research. The bias observed may not apply to journals of others areas of science.

Keywords
gender, science, editor, science communication

This article is included in the Science Policy Research gateway.
Introduction
Gender bias has been observed in several aspects of science, mainly
in the authorship of scientific papers, first author position, grants
and employment\textsuperscript{1,2}. It is possible that this bias is present for other
important positions in science, such as the editorial positions in sci-
entific journals. With this in mind, we determined the percentage
of women who are editors-in-chief of environmental science journals.

Methods
The list of journals was obtained from the 2015 Thomson Reuters
Web of Science database, which groups journals by impact factor
and area of scientific expertise. We chose journals grouped into
environmental science. Since the name and gender of the editor-in-
chief is not reported in this database, a web search was performed.
The name of the editor-in-chief was obtained from the respective
web page of the journal. In cases where it was not possible to iden-
tify the gender with the name only, a more extensive web search was
performed. The criteria used to identify the gender was a headshot
on the website of the respective institution, a Researchgate profile,
or the journal that he or she directs. Differences between genders
and amongst groups of journals were determined with a chi-square
test. NCSS version 11 was used for statistical analysis.

Results and discussion
A total of 103 environmental science journals were analyzed. Of
these, 22 journals had an impact factor (IF) < 1; 50 journals had
an IF between 1-2; and 31 journals had IF > 2. For 4 journals, it
was not possible to identify the gender of the editor-in-chief. The
list of journals analyzed is available as a dataset. Overall, the per-
centage of women that were editors-in-chief was 21.6\% (Table 1).
This percentage was different according to the IF of the journals. In
journals with low IF, the percentage of women as editors-in-chief
was 33.3\%, in journals with IF between 1-2, this percentage was
21.6\%, and in journals with IF > 2, the percentage was 14.9\%. The
decreasing trend was statistically significant.

Women are underrepresented as editors-in-chief of environmental
science journals and suggests a gender bias. Several factors that
could contribute to underrepresentation of women in science have
been previously suggested by other authors and could explain this
observation\textsuperscript{3}. Childbearing, forming a family, gender expectations,
lifestyle choices and career preferences are among these factors.
Other factor could be the scientific area. The percentage of women
as editors-in-chiefs probably is major in areas where their partici-
pation is more active, so this analysis should be made with other
types of journals that specialize on other fields of science. Finally,
more studies that corroborate and identify causes of this outcome
are needed.

Table 1. Percentage of women as editors-in-chief of
environmental science journals.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Total (N=148)</th>
<th>Impact factor</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>&lt;1 (N=27)</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>21.6</td>
<td>33.3</td>
</tr>
<tr>
<td>Male</td>
<td>78.4</td>
<td>66.7</td>
</tr>
<tr>
<td>P value</td>
<td>&lt;0.01</td>
<td>0.21</td>
</tr>
</tbody>
</table>

Data availability
Dataset 1. List of journals included in the analysis. DOI, 10.5256/
f1000research.11661.d16903

Competing interests
No competing interests were disclosed.

Grant information
The author(s) declared that no grants were involved in supporting
this work.

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Gender: A Follow-up to the National Faculty Survey Cohort Study. Acad Med.
2. Larivière V, Ni C, Gingras Y, et al.: Bibliometrics: global gender disparities in

3. Ceci SJ, Williams WM: Understanding current causes of women’s underrepresentation
F1000Research. 2017. Data Source
Open Peer Review

Current Peer Review Status: ? ?

Version 1

Reviewer Report 31 August 2017

https://doi.org/10.5256/f1000research.12595.r24413

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This study addresses an important topic - the gender balance at the highest levels of journal editorial leadership. There data collection and analyses are straightforward and technically sound. While there is value in documenting the gender ratio of editors-in-chief, however, the study doesn't place these results in a greater context. This is both surprising and disappointing given the substantial research on the topic (and very little of which is cited). Why focus on environmental biology? How do these results compare with those from other fields? Why is the observed gender imbalance a problem and what can be done to remedy it? Without addressing these questions I would encourage the authors to move beyond simply presenting the data to interpreting and contextualizing it. This will greatly increase the impact of their substantial effort.

Is the work clearly and accurately presented and does it cite the current literature?
Partly

Is the study design appropriate and is the work technically sound?
Partly

Are sufficient details of methods and analysis provided to allow replication by others?
Yes

If applicable, is the statistical analysis and its interpretation appropriate?
Yes

Are all the source data underlying the results available to ensure full reproducibility?
Yes

Are the conclusions drawn adequately supported by the results?

Page 4 of 6
Yes

**Competing Interests:** I am the co-author of an article on the same topic: doi:10.7717/peerj.542

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard, however I have significant reservations, as outlined above.

Reviewer Report 29 August 2017

https://doi.org/10.5256/f1000research.12595.r25001

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Karin Amrein
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In a short research note, Yeverino-Gutierrez and colleagues report interesting data on the representation of women as editors in chief in environmental science journals.

A few major aspects should be clarified:
- In the abstract, the authors should state some specific results of their analysis (no. of journals, no. of editors, % female etc.)
- The manuscript is indeed very short and would benefit from some greater detail for all sections.
- The numbers mentioned in the text are discordant to the numbers in the table (e.g. 103 journals analyzed vs 148). Were data missing and if yes, why?
- I think it would be better to use tertiles in the analysis of impact factor in order to have similar group size as opposed to an arbitrary cutoff for the impact factor.
- Limitations should be added (only one time point, only one category, etc.)
- Add the used test to the table legend.
- A few minor typos/grammar errors are present

PS:
- Were any efforts made to contact the journals and obtain more detailed data from them or have more information about the process of assignment for editor in chief?
- Are the authors aware of data on how the percentage of women in scientists or people working in this field is?
- To date, the category "Environmental Sciences" has well over 200 journals. Were indeed only 148 listed in 2015??

Is the work clearly and accurately presented and does it cite the current literature?
Partly
Is the study design appropriate and is the work technically sound?  
Partly

Are sufficient details of methods and analysis provided to allow replication by others?  
Partly

If applicable, is the statistical analysis and its interpretation appropriate?  
Partly

Are all the source data underlying the results available to ensure full reproducibility?  
Yes

Are the conclusions drawn adequately supported by the results?  
Partly

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