

Diversifying views

Bringing different voices to peer review will benefit research, but it is not a simple task.

Climate change is a global problem, yet research tends to be dominated by the Global North and diversity is needed to understand and address the challenges ahead. *Nature Climate Change* strives to bring different disciplines together to tackle these issues, as it is exposure to different ways of thinking, people and practices that will open up new solutions. But there is more to diversity than academic background.

As the fourth annual Peer Review Week approaches (<https://peerreviewweek.wordpress.com/>; 10–15 September 2018) we thought we would take the opportunity to share our thoughts on this year's theme (diversity and inclusion) and how this applies to the editors of *Nature Climate Change* when we are searching for peer reviewers, as well as what you — our authors and reviewers — can do to help us improve the system.

Peer review is an imperfect method, but its objective is to check the scientific quality and relevance of submitted work. Why, then, do we need to consider diversity in the reviewer pool? Just as we want a diverse range of voices in our pages, a published paper should be accessible to all who are considering climate change and a diverse group of reviewers is a good way to test this.

Views and perspectives come from individual experiences, and this can inspire new insights, solutions and approaches to questions and problems — all of which will strengthen a research paper. However, assembling a diverse collection of reviewers on a paper can be a struggle, and it takes a conscious effort to work towards achieving this.

There has been much published on diversity, or (more precisely) the lack of diversity, in peer review. Looking across our sister journals, our colleagues at *Nature Ecology and Evolution* reflected on their first year of publication by considering the gender and geography of their authors (of both submitted and invited content) and reviewers (*Nat. Ecol. Evol.* **2**, 1–2; 2018). They found that 26% of the reviewers of research papers were women, which was in line with submitted and accepted papers. Geographically North America and Europe were over-represented in peer reviewers, with Asian researchers being invited to

review at a lower rate than papers published from that region.

Another analysis at *Nature Geoscience* (**10**, 615; 2017) investigating author and reviewer gender and geographical location, and those author's reviewer recommendations, over a four month period showed that author recommendations have a similar bias towards men and North American locations, with Asia under-represented. The reviewers selected by the editors were slightly more balanced, but the trends were similar with North America and Europe dominating geographically and males by gender.

It is not only author suggestions for reviewers that display gender biases; it has been reported that editors of both genders display same-gender preference (homophily) when selecting reviewers (data from the Frontier series of journals; M. Helmer et al., *eLife* **6**, e21718; 2017). Homophily is investigated in that study for gender, but it is likely that this is also true for other characteristics, with editors inclined to invite those who are similar to themselves to act as reviewers, thus perpetuating the status quo.

Although we have not crunched the numbers at *Nature Climate Change*, we suspect that we would show similar trends to those reported, and focusing on only gender and geography neglects much of the diversity that we would like to see in our reviewers. Diversity is not only about gender and geographical location, but these are in some ways easier to track and discuss than other forms of diversity such as ethnicity, career stage, employer category, socio-economic status and political ideology.

Early-career researchers can be overlooked for peer review. Often this can be due to an editor not having enough information to find, or invite, them to take part. But these are the voices that we need to add to the reviewer pool, as they can bring a fresh perspective and enthusiasm.

Turning back to reviewer diversity, an analysis of the American Geophysical Union (AGU) journals showed results similar to those discussed above in terms of gender, but they also considered age (J. Lerback & B. Hanson, *Nature* **541**, 455–457; 2017). Older age brackets (more senior researchers) were preferred reviewers, with only 1% of authors suggesting reviewers in

their twenties. Editors were slightly better, inviting 3% of this young age group from all recommendations. However, although women make up 45% of the membership in this age bracket, they comprised only ~30% of this cohort invited to review.

This is where we need your help. As an author, consider diversity when suggesting reviewers; if you are invited to review, but are unable to, take the time to promote those around you who may not receive such invites. The easy option is to recommend a top name in the field, but a better choice is to put forward an early-career researcher/minority group — someone at your institution, a collaborator or colleague who is setting up a lab, the previously unknown presenter of that talk from the last conference that you engaged with. We always appreciate these recommendations and you may be offering a development opportunity for that researcher.

Reflecting on our own early careers, the *Nature Climate Change* editorial team had differing introductions to peer review. One such experience was in assisting a PhD supervisor on a review that they had been invited to submit. Supervisor and student independently read the paper and summarized their thoughts and comments before coming together to compile the report. Working in this way will take more of a supervisor's time than doing the report independently, but it facilitates training and a shared review can instil confidence in how to approach a paper, as well as teach someone how to present the key points in future reviews. It can also help to engage early-career researchers in the process, rather than only ever being on the receiving end of reviews — which can be hard to objectively learn from given that your own work is being critiqued. Learning to review a paper can be difficult, with no strict formula on what makes a great review, but it is a key part of research and we encourage you to support your early-career colleagues in developing these skills.

There is no quick fix to diversifying research and, more specifically, reviewers, but a concerted effort by editors and the community can see progress made. □

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