

Case study

Recognizing citizen scientists in scientific publications

SOURCE: Ward-Fear, G., Pauly, G. B., Vendetti, J. E., & Shine, R. (2020). Authorship protocols must change to credit citizen scientists. *Trends in Ecology & Evolution*, 35(3), 187-190. <https://doi.org/10.1016/j.tree.2019.10.007>

In Australia, native apex predators face fatal poisoning when they consume toxic invasive species of cane toads. To try to reduce the harm, a group of researchers investigated a novel conservation intervention aiming at discouraging native fauna from ingesting cane toads. The researchers collaborated with a group known as Balanggarra Rangers representing the indigenous traditional owners of the region. The research team consisted of both scientists and the Rangers, and the latter's role in the research was substantial.

However, the researchers soon realized that acknowledging the contribution of the Balanggarra people is a very difficult task. The scientists strongly believed that selecting only a few citizen scientists for authorship would have been both arbitrary and culturally insensitive. After negotiating with editors and editorial staff they succeeded in adding the 'Balanggarra Rangers' as group co-authors on two scientific papers. That was an expression of appreciation for the scientific value of traditional knowledge and skills, as well as respect for the collective cultural identity. Unfortunately, the group name of co-authors was often misleadingly abbreviated in citations as 'B. Rangers', because of using citation management software. In other scientific publications, the researchers were unable to include the Balanggarra Rangers as co-authors, because in some journals group authors are not allowed and other journals require an official academic affiliation for all co-authors. This experience has raised questions on proper and respectful ways of recognizing the contribution of citizen scientists in scientific publications.

*The International Committee of Medical Journal Editors (ICMJE) recommends that **authorship** should be based on the following four criteria: (1) "Substantial contributions to the conception or design of the work; or the acquisition, analysis, or interpretation of data for the work; AND (2) drafting the work or revising it critically for important intellectual content; AND (3) final approval of the version to be published; AND (4) Agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved." (ICMJE, see the supplementary readings list) According to these criteria, an individual can be considered as an author only on the condition if he/she fulfils all four conditions mentioned above.*

*Persons who have contributed to the paper but whose contribution does not justify authorship may be considered as contributors and their role should be described in the **contributorship** statement or acknowledgements.*

Questions for discussion:

- 1) The case raises some issues about authorship and contributorship in the context of citizen science. What are these issues?

- 2) Please discuss in the small group what are the pro and contra arguments for using each type of acknowledging the contribution of citizen scientists in this case. Fill in the table with pro and contra arguments.

	Pro	Contra
Authorship (according to ICMJE criteria)		
Contributorship		
Group coauthorship		
Including in acknowledgments		