

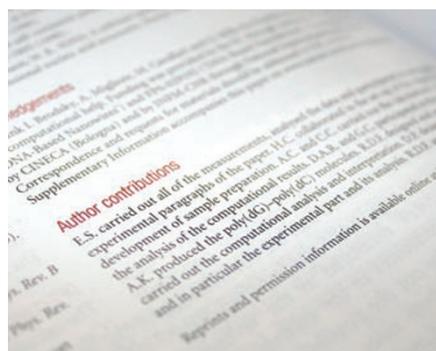
# Authorship matters

Individual contributions should be carefully evaluated when compiling the author list of a scientific paper.

The guidelines for authorship of international institutions and research societies, including, for example, the Materials Research Society<sup>1</sup> (MRS) and the American Physical Society<sup>2</sup> state that “authorship should be limited to those who have made a significant scientific contribution to the concept, design, execution, or interpretation of the research study”.

Authorship assigns responsibility for the work, and it is fair that only those who have actively participated in the work should benefit from the positive aspects of being an author, such as potential career progression or increased chances of obtaining funding. At the same time, it should be made clear who should respond to any queries about the work after publication. Although these considerations, as well as the general guidelines above, are common sense, controversies regarding the author list keep arising<sup>3</sup>.

The problems are mainly a result of different interpretations of the words ‘significant contribution’. A classic example is the case in which an experimental facility has been used to obtain some of the data. Without the work of scientists employed to run that facility those results could not be obtained. But is their contribution to the specific work enough to warrant authorship, or would acknowledgements be more appropriate? What about the director of the facility? Should the contribution of technicians warrant authorship in general? What about collaborators that helped obtain funding that was used for the work? And what about reviewers, who in some cases substantially help improve a paper, but whose contribution is mainly editorial?



The ‘Author contributions’ statement is a valuable tool for appreciating the efforts of individual scientists towards the publication of a paper.

In general, the above-mentioned guidelines leave room for interpretation. The MRS guidelines, however, quoting a document of the German Research Foundation<sup>4</sup> (DFG), provide more details and highlight examples of contributions that although important, do not warrant authorship. Although this might seem surprising for some, securing funding or obtaining part of the data do not automatically warrant authorship in the view of the DFG, if a clear insight into the design and outcome of the work has not been provided. Clear-cut rules are certainly hard to implement and there will always be a degree of uncertainty in defining the significance of a contribution, but several steps can be taken to improve the situation. Institutions should make the effort to clarify and unify codes of conduct, and, most importantly, ensure that scientists, particularly those at the beginning of their

careers, are informed of the procedures and appreciate the importance of the issue.

It should be clear that it is not up to editors to establish author lists, this is always the responsibility of the scientists and institutions involved. At Nature Publishing Group, we do, however, provide guidelines to help define the responsibility of authors<sup>5</sup>. Since 1999 Nature journals have encouraged authors to specify the efforts of each author towards publication<sup>6</sup>. These ‘Author contributions’ statements are a valuable exercise in ensuring that authors themselves analyse and estimate the degree to which each of them has contributed, and provide the community with a direct means of appreciating the achievements of individual scientists. And undoubtedly they represent a powerful tool for assigning responsibility when cases of misconduct arise after publication (see, for example, the *Nature* editorial on ‘accountability’<sup>7</sup>).

We certainly appreciate the increasing number of submitted manuscripts that include author contributions. Editors at Nature Publishing Group are currently considering making them compulsory, a development that is fully supported by *Nature Materials*. In the meantime, we strongly recommend that our authors consider the value of such statements and make them common practice.

## References

1. <http://www.mrs.org/>
2. <http://www.aps.org/>
3. Editorial. *Nature Mater.* **3**, 743 (2004).
4. <http://www.dfg.de/>
5. [http://www.nature.com/authors/editorial\\_policies/index.html](http://www.nature.com/authors/editorial_policies/index.html)
6. Editorial. *Nature* **399**, 393 (1999).
7. Editorial. *Nature* **450**, 1 (2007).

Views from readers on matters concerning authorship can be posted and read at <http://blogs.nature.com/nautilus/categories/authors/>