



EDITOR'S NOTE

Handling the Thorny Issue of Coauthorship in Scientific Publishing

Publication practices, like most things in science, have evolved over time. Long gone is the monograph that marked the culmination of a career. The “publish or perish” mantra has become increasingly demanding, with expectations regarding publication counts inexorably climbing. Those competing for academic positions may notice that the publication records of the evaluators often reflect a different standard from that which they are told they will need to meet in order to advance. On its face, encouraging productivity can be positive, fostering more engagement and creating additional opportunities. This can, though, sometimes be the fairytale side of the story.

Authorship or coauthorship has become the coin of the realm in the academic world. Efforts offered by those acting as a sounding board or draft reviewer that once would have earned a “Thank you” can now sometimes come with a hope, if not expectation, of coauthorship. The justification for this can be variable. It is possible that a critical contribution was provided that warrants such recognition. It is more likely, however, that the pressure to publish plays a greater role in the drive to be credited. Efforts that probably should be thought of as collegial can increasingly be seen as opportunities to meet demanding targets.

Pressure, subtle or not, can come from other directions. It was common in the past for laboratory or facility directors to be honored with coauthorship credit even if they had little or nothing to do with the research being published. In some cases, this has morphed into situations in which the inclusion of senior persons can smooth the path for advancement of junior ones. In any case, the value of coauthorship is weakened when it is given for the wrong reasons.

The International Committee of Medical Journal Editors (ICMJE) provided a great service to the community in drafting clear and rational recommendations for coauthorship. ICMJE recommends that the following 4 criteria be met¹:

- 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.

The ICMJE guidelines can take some of the pressure off in discussions of coauthorship. Individuals who meet the 4 criteria should be included without question. Those who do not should be considered more critically. In some cases, a more focused contribution of great importance could warrant coauthorship. In other cases, contributions may best be recognized in the acknowledgments or not at all.

One of the factors important to research, but notably absent from the ICMJE criteria, is research funding. Although it is very likely that a person responsible for securing research funds will be actively engaged in project execution, the absence of such participation excludes them from coauthorship credit. The same can be said for superiors or supervisors who are not directly engaged. Coauthorship requires real effort. An increasing number of journals require specification of coauthor contributions to ensure that inclusion is appropriate.

Once an author list is complete, the next hurdle is coauthor order. In spirit, it should reflect relative contribution and role. The 2 strongest positions in the author order can be the first and last positions. The first author is expected to be the individual who took the lead on most, if not all, phases of the research and reporting effort. This would be true in the case of independent investigators. If the first author is being mentored through the process, the final author position is given to the senior author mentor.

The next critical assignment is that of corresponding author. This is, ostensibly, the individual who takes the lead in the peer review submission process and who should be contacted with questions regarding the published paper. It will usually be the first author for independent investigators but may be the senior author for mentored work, particularly if the content is part of an overall program directed by the senior author.

The assignment of authors between the first and last should again reflect relative contribution. The second author position can represent the second highest level of contribution for work with no senior author mentor. This

position is sometimes subject to negotiation, with some authors requesting published acknowledgment of joint first author credit. Although this request might be honored by some journals, it is an imperfect solution because claims of equivalent status are not automatically recognized by archiving services if more than 2 coauthors are listed on a paper. A greater acknowledgment of credit could be achieved by assigning the second author as corresponding author, which could work if that individual is a key, and likely sustaining, member of the research team.

The positions from the third to the senior author are generally uncomplicated, with an expectation that those closest to the front of the list contributed more. The number of positions available, however, can become problematic. Many journals limit the number of authors listed in references, often with any more than the first 6 described only as "et al." Long author lists can hide the presence of a senior author, which could be important in some cases—for example, if the other authors are unknown to the community.

Some mentors believe they are best supporting mentees by including them as coauthors. This is a generous thought, but potentially misplaced. The argument that trainees can be credited with sufficient input to warrant coauthorship will often stall with the third ICMJE criterion. Giving trainees final approval of the version to be published creates some hazard: although they will generally comply with the position of the more senior authors, what if they do not? The best course is open to debate, but my strong preference is to engage students so they can earn coauthorship credit where fully deserved, but to not let them expect it for anything less.

People need to be acknowledged for their contributions, but an appropriate perspective must be maintained. Similar to the reality that effort does not equate to publishability, effort does not necessarily equate to coauthorship credit. Coauthorship decisions (wrangling) can be extremely divisive. There is, unfortunately, no simple solution. Some like

to believe that coauthorship decisions should be made in advance of project execution, but this is only valid if the reality of the final accounting matches the plan. If some collaborators contribute more or less, or if the scope of a product changes materially, advance agreement can easily become as thorny as no agreement.

The optimal scenario is for collaborative groups to be sufficiently productive for discord to be reduced. For example, a lower ranking position on one paper could be balanced by a higher-ranking position on another, or a more well-established collaborator may be less concerned with authorship position. The more typical situation is for the project leader to make appropriate assignments. This can work well if this person has the best view of the contributions made by all and sufficient status and objectivity to share credit fairly.

Journal editors will ask for author lists to be justified or trimmed if the description of coauthor contributions is insufficient or if the totality of the author list appears to exceed the effort required for the submitted product. Decisions on how to trim bloated lists will typically be left to the corresponding author to address with the panel. Losing an anticipated authorship credit will be frustrating for some, but it can serve as a positive lesson if it inspires greater contribution with subsequent opportunities.

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Reference

1. International Committee of Medical Journal Editors. Defining the role of authors and contributors. <http://www.icmje.org/recommendations/browse/roles-and-responsibilities/defining-the-role-of-authors-and-contributors.html>. Accessed August 8, 2019.