

What to do about . . . authorship?

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Keywords

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Authorship of scientific papers is important – it influences decisions around appointment to positions, promotions and the award of grants – it defines scientific careers. How often have we heard the introduction at scientific conferences ‘I would now like to introduce Professor X who needs no introduction, he or she has been an author on over 500 publications . . .’ Many of the audience may think ‘Woah – that’s a lot of publications, how hard working they have been’. In contrast you might also reasonably think ‘Can they really have fulfilled criteria for authorship of so many papers?’. In this issue of the *British Journal of Pain*, Gadjradj et al. (2021) have undertaken a study among authors of manuscripts in high impact journals in the field of Anaesthesia and Pain Medicine. The study was small but there are some useful (and perhaps not surprising) results. In almost half of papers, authors acknowledge that there were some who did not meet the International Committee of Medical Journal Editors (ICJME) criteria for authorship, although a much smaller proportion self-assessed that the authorship had been ‘honorary’. In a small proportion of papers, senior members of staff were automatically included as authors.

Authorship is binary, you are either an author or not, and yet contribution is not binary – likely many people will have made contributions along the way to make the manuscript possible. From initial ideas, facilitating the resources to make the work possible, to technical help including analysis of data and then writing the manuscript. The degree and type of contribution will vary but when does it cross the threshold of satisfying criteria for authorship? The ICJME is intended to provide clarification but what does ‘substantial contribution to the design of the work’ mean

and when do comments on a manuscript constitute ‘important intellectual content’? Thus, inevitably there is a necessity for interpretation and it is this interpretation which is likely to lead to variation.

So, it seems despite the fact that criteria have existed for many years, they are often not being followed, and there are challenges in doing so. Researchers will work in departments and collaborations in which there will be a ‘research culture’, and this may include allocating authorship in a way which is not consistent with criteria. It can be challenging, particularly for junior researchers, to change such a culture and in any case such changes normally take time. Such cultures will vary from group to group but also be determined by wider norms which vary between countries. In contrast, senior scientists will be aware of the importance of authorship at the early career stage and likely wish to facilitate authorship on work going on in the wider department.

The trends in research (particularly medical science disciplines) is for larger and more multi-disciplinary teams where a greater number of people may make contribution to the work but perhaps most will make a small contribution. Inevitably you will want to establish harmonious working relationships across such a group and it may be perceived negatively (and harm

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future working relationships) if you then interpret criteria strictly and exclude people who feel they have been critical to the work and manuscript. Indeed when one has been listed as an author and one politely declines because you know you do not satisfy the necessary criteria, it can also be perceived negatively and your colleagues then wonder why you do not wish to be a co-author on the work. It is also becoming more common to combine datasets to provide greater statistical power to answer a scientific question. This has been most often in genetics studies but also happens, for example, in researching treatment effects and the epidemiology of chronic pain. Typically one centre will act as the co-ordinator of the work and datasets sent from the collaborating sites. There could be, say, 15 such sites and often it is agreed in the initial negotiations that each centre would have a set number of authors. So, there may be a very large number of authors on the manuscript, but will all of them satisfy criteria for authorship (unlikely) or made important contributions making the manuscript possible (almost certainly)? The collaborating centres' authors are likely to have been key in setting up the original studies and decided the aims and objectives, data collection and other activities. But they are unlikely to have all been key in the additional work involved in the combined analysis. Indeed often their contribution to the combined manuscript is a comment such as 'Great work!' or checking that their name and institution details are correct. Despite the fact this situation is probably apparent to everyone from authors to journal editors, these manuscripts keep appearing with very long lists of authors. Can you imagine co-ordinating a manuscript in which 30 people were all making an 'important intellectual contribution' – it would be like trying to drive a minibus with lots of people shouting their advice on how to drive and the route to take to your destination!

So what to do about this? First, there is no simple solution or we would have identified and implemented it by now. To provide greater detail, one could have a contributor statement which states who did what. This is required by some journals. For example, 'A.B. and B.C. conceived the idea for this work. A.B. developed the idea, identified the datasets which were used and C.D. performed the statistical analysis. D.E. provided advice on the analytical methods and reproduced the analysis to verify the results were the same. All authors discussed the results. B.C. drafted most of the paper but C.D. wrote the analysis section. All authors made comments on the manuscript'. We could go even further and *replace* authorship lists with contributorship statements – writing (or revising) some or all of the

manuscript would simply become one aspect of contributing. Specifically, the CRediT – Contributor Roles Taxonomy (CRediT – Contributor Roles Taxonomy (casrai.org)) has been developed and is described by the developers as 'a high-level taxonomy, including 14 roles, that can be used to represent the roles typically played by contributors to scientific scholarly output (Allen et al., 2019). The roles describe each contributor's specific contribution to the scholarly output'. These roles cover activities from 'conceptualisation' to 'writing – reviewing and editing' but also include categories such as 'data curation', 'project administration', 'funding acquisition', 'supervision' and 'visualisation'. This moves away from a binary allocation of authorship (and indeed a requirement to have had some contribution to the writing) to a description of what you contributed to the work. For example, you may have undertaken the visualisation of some complex data – and this would be reflected in the CRediT system even in the absence of you undertaking writing activities.

So looking forward – there are undoubtedly issues with our current system of authorship, which is partly reflecting changes in the way we work in science and how we value and how we wish to reward input to the scientific process. Rather than try to tamper with current criteria, perhaps it is time for a radical overhaul?

Conflict of interest

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Guarantor

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