



The Issues with Authorship and Contributor Accreditations of Effort

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Introduction

There is no doubt that manuscript authorship is a contentious topic that many authors find difficult to discuss openly with colleagues and supervisors. What constitutes sufficient contribution to a manuscript can be subjective at times, with key manuscript stakeholders having potentially strong differing views on the inclusion and order of contributing authors. In an attempt to bring a semblance of consistency and fairness to this matter, numerous journals [1], funding bodies, and institutes have written recommended guidelines for investigators regarding authorship inclusions. However, the ongoing persistence of this matter, and the frequency with which this topic is a cause of argumentation and friction between investigators, merely highlights the need for better solutions in team science as a whole.

While not a commonly discussed or published on topic, a number of studies have been published summarising the views and opinions of questioned researchers from differing regions worldwide [2-5]. These publications have typically highlighted two recurrent instances of unfair/unethical authorship, ghosting and gifted, which are probably the most egregious and easiest instances of unfair/unethical authorship to define. Briefly, ghost authorship is when contributing authors are removed entirely. This can occur when investigators wish to avoid potential conflict of interest issues (such as when dealing with corporate based collaborators) to simplify the manuscripts review and publishing but can occur more subtly when contributions are simply not

accredited justly owing to a difference of opinion on the degree of contribution. Contrary to this, gift authorship is when individuals do not make substantive contributions to the paper yet are still included. There are a number of instances when this occurs such as when a collaborator merely provided reagents or samples used in the work, or when including senior academics in the department, or when including colleagues who have gifted authorship on their publications, or when investigators simply wish to “share” the publication with friends and colleagues. In addition to ghosting and gifted authorship though, there exists two additional occurrences of unfair/unethical authorship which are much harder to define, much more subtle in presentation, and can potentially overlap in certain instances. These are excessive inclusion and inadequate accreditation of effort (IAE).

As research becomes more inter-disciplinary and collaborative, so too has the prevalence of excessive inclusion of authors. It is regularly seen that high impact publications have large contributing author lists, with some consortia publications exhibiting what has become known as hyper authorship. In these instances, included individuals may not have made substantive contributions to the paper, but none the less are included for a plethora of reasons. A common reason for this though is to bolster publication records of colleagues, especially if the publication is in a high impact journal, since publication quantity is a highly rated commodity in the research field. While many researchers are more accommodating of this type of gratis authorship to colleagues provided added authors

are not in “key” author positions (such as first or senior positions in the biological sciences), such a practice is becoming exceedingly apparent by the sheer size of the publication’s authorship list which unfortunately, harms authors who did make significant but less substantial contributions to the paper, as their contribution becomes victim to the second subtle yet more serious authorship issue, IAE.

In publications with a large number of authors, senior investigators need to justify the inclusion of authors listed. While this is relatively easy for those with major contributions to the published work, those with significant yet less substantial contributions are simply grouped with other authors given gratis authorship, thus giving rise to IAE. This can be particularly harmful for investigators and researchers needing publications for progress and performance reviews, as their contributions are over-shadowed by those making no contributions with no clear and easy way to validate and show one’s efforts. Where IAE becomes a major issue on its own, is when authors are given key “co-author” positions forcefully by senior investigators unjustly, or, in direct opposition to this, when investigators are not given “co-author” positions despite making significant contributions to the work. In the first instance, the main investigator is forced to “share” accreditation of work with others unjustly and unethically. Junior researchers in particular fall victim to this as they are not in a position to object to the senior investigator, with potentially severe and dire consequences to their future careers if they do. Furthermore, researcher institutes and universities turn a blind eye to such occurrences and complaints so as to not upset senior investigators, who can have tenured positions, for the sake of a student that will be gone in a couple years. This behaviour can be seen as an abuse of seniority over junior investigators and can breed bitter and long-lasting ill-feelings between investigators for obvious reasons. More worryingly and disturbingly though, is the inaction by many universities and research institutes to be a source of recourse when such conflicts arise.

Contrary to the forced inclusion of co-authors unjustly, is the second type of IAE, exclusion of earned authorship. A trend in recent publications is the use of “co-authorship” positions, particularly for the coveted first and senior authorship positions in the biological sciences. Inherent in the use of this term though, is the definition that “co” researchers have made equal contributions to the paper, a value that is incredibly difficult to define or quantify especially when investigators have different fields of speciality, such as between wet- (practical) and dry-(theoretical) lab investigators. Where IAE issues arise between wet- and dry-lab researchers, is when investigators attempt to quantify the contribution of each to a project using inadequate metrics such as “time spent” on a project. To clarify, the dry lab researchers referred to here are not those in a pay for service core facility, but rather independent researchers pursuing careers in the computational sciences. Whereas wet-lab researchers can spend years performing experiments and

optimizing techniques since culture and animal samples can take days, weeks or months to grow, dry-lab researchers have at their disposal super-computers capable of performing analyses at speed and scale far beyond what a team of researchers could perform by hand. The effort and timescale of both researchers are therefore incomparable, and so it is essential to attribute authorship based on different metrics, one example of which is intellectual contribution to the project. Such differences in points of view give rise to the afore mentioned second form of IAE, where authors are not given equal authorship despite making significant and vital contributions to the work. A dry-lab researcher may spend less time on a project, but if their analysis and findings are essential to the direction and findings of the project such that the project is significantly diminished without their work, and they contribute by suggesting and working on new ideas and directions for the project, then that is a major contribution and necessitates an authorship position and status signifying said contribution. All too often though, dry lab researchers are seen simply as a “tool” to be used like lab equipment rather than as colleagues, and thus, frequently falling victim to IAE.

As discussed though, current authorship norms revolve around coveted author positions (such as first and senior in the biological sciences) with an increasing trend of including additional “co-authors” to signify contributions. While such an approach can resolve disputes, current citation norms do not adequately represent such contributions, and many academic faculty evaluations simply disregard such “co-author” contributions. Ideally, citation conventions in publications and presentation should be changed to highlight all co-first authors, not just the first named author, thus more fairly and ethically showing contributions of key authors. This necessitates also, changes to how citations are managed and presented in citation manager programs and tools.

Additional convention changes should also be made to authorship contribution paragraphs in publications. In most published journals, authorship contribution paragraphs are very sparse in detail and do not adequately highlight the efforts of each author across the different aspects of the publication. To address this, the field has indeed made progress with the development of the CRediT taxonomy to more accurately detail the contributions of authors, an initiative that is already accepted by publishers such as Elsevier and Wiley, and should become mandatory by publishers, rather than optional. Such authorship transparency can be a positive for the field as a whole provided CRediT statements are completed honestly and justly and when investigators (junior or senior) do not unjustly and unethically attribute contribution when none or little has taken place. However, since some instances IAE stem from abuse of senior authority over projects, detailed CRediT statements may not be sufficient in certain scenarios. In those instances, research institutes and universities need to get involved, stop turning a blind eye, and establish arbitration committees to handle such instances internally, while ensuring to not bias senior or established researchers over junior investigators.

While some would suggest that binding contribution statements should be completed prior to any work commencing, findings and results can change the focus of the project over time, thus requiring reassessment of contributions come manuscript preparation. We therefore do not see that such statements will be entirely valid by the end of the project.

Team science will always be an incredible source of innovation and discovery, which can at times be marred for some by authorship disputes for projects. This unfortunate truth is a consequence of the emphasis placed in the field on publication throughput and author rankings of published works. While there is no single cause of authorship disputes, and no single resolution to fix issues that arise, there are certain steps the field can adopt as a whole to alleviate or reduce the conflicts that do arise. As author lists continue to grow owing to the increasing multi-disciplinary change in science, a greater emphasis should be placed on contributions to published works (as outlined in CrediT statement) in addition to authorship position, particularly for bodies assessing individuals for promotion and tenure. The field needs to accept that authors can make significant contributions to publications and not be given "first" authorship position for a myriad of reasons. Furthermore, changes to citation conventions ought to be adopted to cite all co-first authors and not simply the first named author alone, thus giving just accreditation for those with significant contributions. These two changes in convention, along with widespread adoption of the CrediT taxonomy, have the potential to significantly reduce or eliminate many authorship disputes by removing competition for the coveted first author position. If disputes continue to arise though, a more drastic measure could be for the field to also consider adopting conventions from other disciplines such as alphabetised author lists, negating coveted authorship positions, or adoption of a two-author list system, one for major contributors,

and another for those with minor but notable contributions. In any case, research and academic institutes ought to concomitantly ensure they have adequate systems in place to arbitrate authorship disputes in an unbiased, just and ethical manner while protecting junior researchers against retaliation from senior investigators if arbitration sides with the junior faculty member.

The points raised in this opinion editorial by no means encompass all the possible scenarios that occur, and neither are the proposed resolutions. It is hoped though that the opinions expressed herein can be a means to open dialogue and discuss deep rooted issues in authorship accreditation in team science, to hopefully bring about a beneficial change in the years to come for existing and future investigators.

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Conflict of interest

No conflict of interest.

References

- 1 (2021) International Committee of Medical Journal Editors. Defining the Role of Authors and Contributors.
- 2 Broderick NA, Casadevall A (2019) Gender inequalities among authors who contributed equally.
- 3 Resnik DB, Smith E, Master Z, Shi M (2020) Survey of equal contributions in biomedical research publications. *Account Res* 27(3): 115-137.
- 4 Misra DP, Ravindran V, Agarwal V (2018) Integrity of Authorship and Peer Review Practices: Challenges and Opportunities for Improvement. *J Korean Med Sci* 33(46): e287.
- 5 Smith E (2020) Researchers' Perceptions of Ethical Authorship Distribution in Collaborative Research Teams. *Sci Eng Ethics* 26: 1995-2022.