



## Addressing authorship disputes

Journal articles are a means of communicating new work between scientists and scholars.<sup>1</sup> While authorship of these publications establishes the accountability and responsibility of the author, misappropriation undermines integrity of the authorship system and the research enterprise.<sup>2</sup>

Authorship disputes are becoming an increasing problem in the scientific community, accounting for 2.3 - 11% of all disagreements.<sup>3,4</sup> It is therefore incumbent on the scientific community to address the disquiet arising from these authorship-related disputes.

The leading cause of authorship disputes is multiple authorship, defined as more than two authors per article.<sup>1,5</sup> Since the 1930s there has been a steady rise in the number of authors per article.<sup>6,7</sup> This is exacerbated by the culture of 'publish or perish' that pervades academic institutions and promotion systems, where more value is placed on the number of publications than on quality of contributions.<sup>8,9</sup> In addition, multidisciplinary research is encouraged as the scientific field is expanding, departments are becoming larger, and the number of specialties is on the increase.<sup>1,5</sup> Culture may also play a role; Japanese articles and circulation journals, for example, have been shown to promote multiple authorship.<sup>10</sup>

While multiple authorship gives credit to all the co-authors, it results in diminished accountability.<sup>11-13</sup> It is deceptive and puts the integrity of co-authors at stake should the article be questioned.<sup>1,5,14-16</sup> In addition, journals have difficulty in deciding on liability should there be problems with the paper.<sup>1</sup>

Guest authorship is one of the practices fuelling disputes related to multiple authorship. It involves inviting those whose contribution has been trivial to be co-authors<sup>17</sup> and accounts for 16 - 33% of articles.<sup>5,18,19</sup> Guest authorship occurs because authors feel obliged to pay tribute to their senior colleagues or departmental heads, and junior authors find it difficult to decline 'requests' for co-authorship from their senior colleagues.<sup>5,7,11,17</sup>

Another cause of authorship dispute is ghost authorship, a practice defined as a failure to name as an author an individual who has made a substantial contribution to the research or who has written the article.<sup>11,17,19</sup> Ghost authors include junior researchers who collect data but are ignored or who have left the institution at the time of publication,<sup>20</sup> and research associates who write scholarly reviews for pharmaceutical companies but whose names are excluded at the time of publication in favour of prominent academics.<sup>11,21-23</sup> Ghost authorship occurs in 9 - 13% of articles.<sup>17</sup>

Determining the order of authors is a well-recognised problem for both journal editors and readers.<sup>11</sup> While it may seem to be implicit that the first author has done most of the work, this is not always the case.<sup>24</sup> One survey established that

only 7 of 39 editors of clinical journals knew what the order of authors meant in their journals because they had written policies on the subject.<sup>11</sup>

In 1985 the International Committee of Medical Journal Editors (ICMJE) met in Vancouver and developed criteria for authorship to address the problems of responsibility and accountability.<sup>25-27</sup> According to these criteria all co-authors should make a substantial contribution to the following: (i) conception and design or analysis and interpretation of data; (ii) drafting the article or revising it critically for important intellectual content; and (iii) final approval of the version to be published. These three conditions must all be attributable to at least one author, who becomes the first or corresponding author. The authors must specify the key contributions by each author.

Acquisition of funding, collection of data, general supervision of the research group, critical review, technical help and intellectual contribution do not qualify for authorship. These participants should be recognised separately in the acknowledgement section.<sup>28</sup> In addition, it is necessary that permission be obtained from the individuals thus acknowledged.

Two other practices have been suggested to reduce authorship disputes. Contributorship<sup>29</sup> involves no ranking of authors; the authors are listed in the byline and the contribution of each author is stated. In group authorship<sup>30</sup> an acronym is used and the authors themselves are listed in a footnote. Both these practices have the disadvantage of diluting the definition of authorship.<sup>1</sup> Although they have been adopted by some journals they are not popular at present.

Researcher knowledge of the ICMJE criteria is variable. In a survey of 66 members of a medical faculty only 5 could specify all three criteria for authorship and only 1 of these thought all three criteria needed to be fulfilled by at least one author.<sup>24</sup> In another survey of 450 authors only 64% fulfilled the criteria for authorship, although 60% of respondents were not familiar with the criteria,<sup>31</sup> suggesting that many authors apply them implicitly. It is of concern that while the authorship criteria were established 2 decades ago, authors are often unaware of these guidelines.

It is the responsibility of researchers, institutions and journals to address problems of authorship by adhering to good authorship practice. Discussions on eligibility and order of authorship should ideally be debated and decided before the paper is written, with each author stating his/her contribution.<sup>24,32</sup>

Formal grievance procedure for authorship disputes is ineffective, as the apprenticeship system that applies to medical scientists makes confrontation with senior established



academics hazardous and institutions cannot realistically protect these individuals from victimisation.<sup>4</sup> An informal confidential channel such as an 'ombudsman office' may encourage correction without compromising the individual.<sup>4</sup> Institutions need to publish their own authorship guidelines.<sup>4</sup>

Journals have a responsibility to promote good authorship practices by publishing their criteria on authorship frequently with a requirement that authors sign to the effect that they take responsibility.<sup>6</sup> Ghost authors need to be 'flushed out' and readers' attention should be drawn to any violation of authorship guidelines, discovered only after publication.<sup>13</sup> Editors and reviewers could assist by dealing decisively with authorship issues. As with authorship responsibility, restrictions on the number of authors to be listed in the byline have been adopted by a number of journals and the National Library of Medicine.<sup>1,28</sup>

In conclusion, the problem of authorship is a challenge to the scientific community, young and old, as well as journal editors and reviewers. Awareness of, and adherence to, authorship guidelines is requisite for all researchers if the cause of authorship controversies is to be addressed. Departmental and unit heads as well as senior researchers should take the lead in familiarising themselves with these authorship criteria so that they can be empowered to offer informed advice to their juniors. Journals have a duty to promote a culture of author responsibility by ensuring that authorship guidelines are implemented.

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