

Ghost busting—taking the sheet off the ghost

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on behalf of the International Rheumatology Editors

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Ghost authorship, defined as when an individual has made a substantial contribution to writing, conducting research for or editing of a manuscript, but is neither listed as an author nor appropriately acknowledged in the paper, is a cause for concern in biomedical publishing. A reader needs to be confident that the paper they are reading is the work of those prepared to take responsibility for it.

The question of ghost authorship causes us to re-examine the criteria of what qualifies a person to be an author of a paper. Where does contribution end and authorship begin? The International Committee of Medical Journal Editors (ICMJE) policy is that credit for authorship should occur if the contribution of the prospective author fulfils each of the following four criteria: i) substantial contributions to conception and design, acquisition of data, or analysis and interpretation of data; ii) drafting the article or revising it critically for important intellectual content; iii) providing final approval of the version to be published and (added in 2013) iv) agreement to be accountable for all aspects of the work, ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved [1]. But what about individuals who

do not meet all these criteria, yet have been substantially involved in the paper? To address this, many of the major general journals [e.g., *New England Journal of Medicine*, *PLoS Medicine* and *British Medical Journal (BMJ)*] have taken a further step of asking authors to confirm that no one has contributed to the paper beyond those named, and that everyone listed as an author has contributed substantially.

Despite all these precautions, authors continue to flout the rules. There have been many papers discussing the use of ghost authors and honorary authorship (individuals listed as authors, but who do not meet the relevant criteria) in clinical trials [2–5]. The *BMJ* published a study performed in 2008 [2] that assessed the prevalence of honorary and ghost authorship in six leading general medical journals. Of the papers assessed, 21 % were found to have evidence of inappropriate honorary authorship, ghost authorship or both. When these results were compared with a study carried out in 1996 [5], a decline in the overall occurrence of honorary authorship and ghost authors (29 and 21 % respectively) was found, but there was no significant change in prevalence of honorary authorship (19 % in 1996 compared with 18 % in 2008). There was a decline of ghost authorship prevalence in the two studies (8 % in 2008 compared with 11 % in 1996), but the problem still exists, and as understanding this depends upon self reporting, the true prevalence may be much higher.

Ghost authorship is not just a harmless shadow over the publishing industry; the ghost in the machine also has clinical implications, an example being the case of Merck and Rofecoxib [4], in which clinical trial manuscripts were authored by sponsor employees, but first authorship was often attributed to academically affiliated investigators.

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We do not believe that medical writers/medical editing should be banned; they can and do have a legitimate place in assisting the preparation of manuscripts. It is their concealment that is unacceptable.

To combat this issue, at the International Rheumatology Editors meeting at the ACR annual meeting on 27 October 2013 it was agreed by all editors that ghost authorship papers submitted to any rheumatology-related journal is not to be allowed. Individuals involved in the writing, editing, and/or conducting research for a paper must be listed either as an author (if they meet the ICMJE criteria) or under the Acknowledgements section. If the latter, their name(s), involvement in the paper, details of any funding provided for their assistance, and the name of the funder(s) should be disclosed. In line with the World Association of Medical Editors recommendations [6], if authors are discovered to have breached these requirements, a notice will be published identifying the paper as being ghost written, and disclosing the names of the responsible companies and corresponding author. Additionally, the corresponding author's institute will be alerted to the violation, identifying to them the companies involved. Following confirmation of ghost authorship, if the journal in question is contacted by popular media or government organizations, specific names of those involved will be provided. In setting this requirement, the aim was to promote good practice to further advance the transparency and integrity in scientific publications, removing the spectre of potential manipulation for the benefit and accountability of the rheumatology community.

Rheumatology Journals that subscribe to the policy *Rheumatology; The Journal of Rheumatology; Arthritis Care & Research; Clinical Rheumatology; Rheumatology International; Arthritis & Rheumatology; Journal of Clinical Rheumatology; Zeitschrift für Rheumatologie; Clinical and Experimental Rheumatology; Modern Rheumatology; Seminars in Arthritis & Rheumatism; Current Rheumatology Reports; Inflammation; Pediatric Rheumatology; Reumatología clínica.*

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