



## Description

Publishing in academic journals remains the principal way to communicate scientific findings to the public and research community. Authorship on a manuscript is representative of the researcher's contribution and assessment of merit as a scientist. However, there is [still much confusion](#) when it comes to assigning authorship to a published paper.

The International Committee of Medical Journal Editors ([ICMJE](#)) recommends that authorship on a scientific manuscript be based on the following criteria:

- Substantial contributions to the conception or design of the work, or the acquisition, analysis, or interpretation of data for the work
- Drafting the work or critical revision for important intellectual content
- Approval of the final version
- Agreement to be accountable for all aspects of the work to ensure accuracy and integrity of the work

The ICMJE recommends that individuals who contributed to the paper but that do not meet all four of the above criteria are acknowledged as contributors. The researchers need to understand the differences between [contributors and co-authors](#) to give appropriate credits.

However, there has been a [shift in trend](#) from few to many authors in recent years. Long author lists are more common in some fields than in the others. A [recent report](#) on findings from the Large Hadron Collider had more than 5,000 authors. It is highly unlikely that each of these 5,000+ individuals met the ICMJE criteria for authorship.

## Hyperauthorship: Reasons and implications

There are many reasons for an unusually long author list. Large-scale studies, such as those involved with the Large Hadron Collider, will inevitably have many contributors. In these cases, hyperauthorship is impractical but not necessarily fraudulent. These studies can be [highly valuable](#) because they promote international collaboration and expand research frontiers. However, it may be more practical to attribute a single multi-institution project name to these studies, rather than thousands of names.

The pressure to publish can lead to fraudulent authorship practices. The number of publications an

individual has dictated the chances of getting research grants, tenure positions, and successful career as a whole. To circumvent career failure, scientists working in the same lab tend to boost their number of publications by including each other's name on their papers. This approach yields papers with author lists far longer than the actual number of contributors. Institutional positions can also have an unethical impact on authorship. Some professors have groups so large that they cannot feasibly contribute to every paper. Yet their name consistently appears at the last author position. This can [present problems](#) for young scientists who are trying to gain independence. In an effort to increase the credibility or recognition of a publication, some scientists also invite individuals who are well known to the field as [guest authors](#) to the paper. This undermines the value of authorship.

Universities need to tackle the unethical impact of institutional position on authorship by allowing junior researchers the opportunity to anonymously report pressure placed on them by professors for last-position authorship. Furthermore, limiting group sizes would help to ensure that professors are able to make valuable contributions to all projects.

## Reducing hyperauthorship requires changes in how academic success is assessed

In most cases, hyperauthorship can be prevented by adhering to the ICJME guidelines. To properly control authorship, it will be necessary for authors to provide a statement explaining how they contributed to the paper. The journal editor, based on a review of this statement, could then grant authorship.

To prevent fraudulent practices, proper credit needs to be given to individuals whose contributions are acknowledged. This requires changes in the way academic success is assessed. Contributions to science need to be measured in ways other than authorship on a scientific paper.

For example, instead of using citations to measure scientific contribution, a system of credits could be used. With this approach, writers, technical contributors, and supervisors would each be acknowledged for their specific contributions.

The changing landscape of scientific research and [academic publishing](#) presents many challenges. Finding a solution to the problems of authorship will require a reassessment of how we reward scientific achievement in the world of academia in the future.

### Category

1. Journal Guidelines
2. Reporting Research

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