

AUTHORSHIP .101

The most frequent cause for disputes among scientists appears to be the criteria for authorship. The two main questions raised by this issue are: (1) Why is authorship important? and (2) What should be the criteria for authorship?

WHY IS AUTHORSHIP IMPORTANT?

Authorship, and more generally credit, is a central component of the structure of science. First, the framework of science depends in part on our ability to identify the development and evolution of new ideas and discoveries. Historically, the recognition of the key players has been useful for understanding what and how we've learned. Second, for the working scientist, it is important to have a basis for reaching out to attract both new trainees and willing collaborators. Authorship can be useful as a means to demonstrate a successful research program. Third, it is often presumed that past success, as evidenced by authorship, is a valid basis for funding agencies to use in the allocation of research grants. Fourth, it is similarly presumed that research institutions can use authorship as evidence of creative contributions that may (or may not) warrant promotion. Finally, in an era of increasing emphasis on commercialization, authorship and credit are clearly linked closely to intellectual property rights. These reasons, and others, provide a compelling argument for scientists to desire the credit of authorship.

WHAT SHOULD BE THE CRITERIA FOR AUTHORSHIP? THE MYTH

A common myth is that the criteria for authorship are widely known and accepted. In fact, the methods of assigning authorship can vary greatly even within the same institution or discipline of biomedical research. In general, relatively junior scientists and/or clinical scientists tend to emphasize the importance of having done the work as a criterion, or the criterion, for authorship; on the other hand, more senior scientists tend to put the emphasis on ideas, experimental design, and data interpretation. In some research groups, decisions about authorship are made solely at the discretion of the principal investigator; while in others authorship decisions are made collectively by all of those having a central involvement in the project. Some investigators automatically expect authorship for providing access to key equipment, samples of an unusual reagent or cell line, or assistance with statistical methods or experimental design; others will argue that these contributions warrant only an acknowledgement, not authorship.

WHAT SHOULD BE THE CRITERIA FOR AUTHORSHIP? COMMON GUIDELINES

It is worth noting that despite the variety of approaches to authorship, guidelines are published in a variety of fields. Most noteworthy is the set of guidelines (below) published by the International Committee of Medical Journal Editors. These guidelines, accepted by over 500 journals in the biomedical sciences, emphasize creative contributions, ideas, design, and interpretation, and specifically exclude the importance of data collection. Clearly, the existence of these guidelines is neither widely known nor accepted among current scientists. Whether or not this particular set of guidelines is ideal, it is clear that all of the reasons listed above for authorship require that the criteria for authorship become more transparent than they now are.

International Committee of Medical Journal Editors Authorship Guidelines

All persons designated as authors should qualify for authorship, and all those who qualify should be listed. Each author should have participated sufficiently in the work to take public responsibility for appropriate portions of the content. One or more authors should take responsibility for the integrity of the work as a whole, from inception to published article.

Authorship credit should be based only on 1) substantial contributions to conception and design, or acquisition of data, or analysis and interpretation of data; 2) drafting the article or revising it critically for important intellectual content; and 3) final approval of the version to be published. Conditions 1, 2, and 3 must all be met. Acquisition of funding, the collection of data, or general supervision of the research group, by themselves, do not justify authorship.

Authors should provide a description of what each contributed, and editors should publish that information. All others who contributed to the work who are not authors should be named in the Acknowledgments, and what they did should be described (see Acknowledgments).

Increasingly, authorship of multicenter trials is attributed to a group. All members of the group who are named as authors should fully meet the above criteria for authorship. Group members who do not meet these criteria should be listed, with their permission, in the Acknowledgments or in an appendix (see Acknowledgments).

The order of authorship on the byline should be a joint decision of the coauthors. Authors should be prepared to explain the order in which authors are listed.