

GUIDELINES ON AUTHORSHIP

BOSTON UNIVERSITY MEDICAL CAMPUS and BOSTON MEDICAL CENTER

INTRODUCTION

Determining authorship in scientific publications is an important part of the research enterprise. Authorship credit is given to those who contribute and participate in substantive ways in the research and in the preparation of the manuscript. Fair and equitable attribution of credit to all participants is critical in maintaining the integrity of the process.

As early as possible in the research process, Principal Investigators should inform collaborators of the requirements for authorship of any manuscript that will report results of the project. The PIs and collaborators should decide who should participate as authors of any such manuscript. Authorship itself should be assessed on the basis of actual participation.

To prevent misunderstandings on authorship, it is recommended that discussions of authorship be held openly and frequently within collaborative projects. Agreements should be established between co-authors early in the research and writing process for each manuscript, and these agreements should be reviewed and revised as needed to reflect changes in the actual contributions of individuals in accordance with these Guidelines.

The present Guidelines are designed to

1. protect scientific careers and reputations by supporting fair and honest portrayal of authorship and acknowledgment of other contributions to research works;
2. protect the integrity of the scientific literature by supporting ethical roles and responsibilities of researchers and authors; and
3. support healthy and successful communication about authorship issues and reasonable negotiation to resolve honest disputes about credit.

APPLICABILITY

These guidelines apply to all faculty, students, postdoctoral researchers, and staff.

Legal ownership of research data and materials produced in the course of an institution's research activities resides with the institution, and not with the individual investigator. However, the ethical handling of publication and authorship is the responsibility of the investigators at the institution. These Guidelines describe some of these ethical responsibilities and some of the processes within Boston University and Boston Medical Center available to support their implementation.

Because there are many different standards across fields regarding authorship (e.g., the order that authors are listed), each laboratory, department, and/or school should have conversations around the issues of authorship and, if needed, should supplement these Guidelines with a description of their own customary ways of deciding who should be an author and the order in which they are listed. These standards should be readily available to all investigators. All contributing authors should discuss and settle the matter of order of authorship early in the collaboration.

AUTHORSHIP GUIDELINES

1. Contributions appropriate for authorship: Anyone listed as an author should have made a substantial intellectual contribution to the work. Intellectual contributions to research require not only technical skills but also intellectual input at any or all stages of the research such as: a) formulation of a hypothesis, b) development or application of novel methods, c) collection of data, d) analysis and interpretation of results, and e) creation of a public description of the work. The potential or actual contribution of each person should be reviewed in order to determine authorship. Participation in *each* of the following areas is generally required for authorship (see the ICMJE report for additional information at http://www.icmje.org/ethical_1author.html):

1. The design and conduct of the study, or the analysis or interpretation of the data
2. The preparation of the manuscript
3. Approval of the manuscript prior to publication

Power over the employment, research opportunities, and recommendations of junior authors should not be used as an inducement for authorship credit to senior colleagues in the absence of substantial intellectual contribution to the work of a junior colleague, nor should it be used to determine authorship order. While the principles of authorship depend on contributions rather than status, some groups may by virtue of their status be more vulnerable to errors of one sort or the other. For example, department chairs/section chiefs or senior investigators may, solely by virtue of their position, be regularly included as authors of manuscripts emanating from their departments or projects; ***this practice is in conflict with the Guidelines presented in this document.*** Conversely, students, research assistants or other project staff, may, as a matter of course, be overlooked as potential authors simply by virtue of their status; ***this practice is also in conflict with these Guidelines.***

An individual's financial support for a project or position of seniority does not in and of itself warrant authorship. A person does not qualify for authorship merely by virtue of providing or assisting in obtaining funding for the project, suggesting an idea for the project, acting as faculty or thesis advisor, contributing services, equipment or facilities, or holding a position of seniority in the place in which the project takes place. One's professional position, status or title alone does not entitle a person to be named as author. Similarly, lack of seniority should not preclude any individual from becoming an author if that person performs the responsibilities of authorship.

2. Contributions appropriate for acknowledgment: Acquisition of funding and provision of technical services, materials, or the like, while they may be essential to the work, are not in themselves sufficient contributions to justify authorship. These contributions should be acknowledged but not accorded authorship.

3. Inclusion of all authors on the work: All those who have made substantial intellectual contributions to the work should be listed as authors. When research is done by teams that carry out highly specialized work, it is expected that an individual's contributions may be limited to specific aspects of the research. Nevertheless, all authors are responsible for the final manuscript in its entirety.

4. Reviewing and approving the manuscript: If the work is a manuscript, all authors of the work should participate in its writing by reviewing drafts and approving the final version. One of the authors, either

the corresponding author or the senior author (if they are not the same contributor) should agree to take responsibility for ensuring that all contributors have reviewed the final manuscript and are in agreement with it before submission.

5. Providing information and materials: Authors bear responsibility for the reasonable provision of information and materials to qualified investigators for the purposes of replicating, extending, or testing the results and methods reported in a research publication.

COMMON AUTHORSHIP ERRORS

Two general errors dilute the currency of authorship: errors of commission, in which an individual is credited with authorship without fulfilling the responsibilities of authorship; and errors of omission, in which an individual who has fulfilled the responsibilities is not credited with authorship.

The risk of both errors increases in collaborative projects, when many individuals contribute to the work. The determining factor for authorship should always be the actions of individuals (as defined above) in designing and carrying out the work, and in the preparation and approval of a particular manuscript.

IMPLEMENTATION

Collegiality: The principle of collegiality is at the heart of successful implementation of these Guidelines. This principle supports the following implementation processes.

Early discussion and avoidance of miscommunication and conflict: Authorship credit and disposition of collaborative data and materials are best governed by early discussion and mutual agreements between the collaborating investigators. Research groups should strive to create an environment in which all participants can clearly articulate their ideas and vision to other team members. Group members should also be willing to contribute to a collaborative process and the group's shared goals. Research groups should discuss data handling, credit, publication, disposition of data and research materials, and future directions of the research as early as practical, and frequently, in the course of their work. ***It is the responsibility of the director or Principal Investigator to ensure that such discussion occurs.*** The decisions of the group should be clear and shared with all members. This should include discussions of how authorship will be handled if an individual who would otherwise be considered an author moves and is unresponsive to repeated attempts to contribute to the final publication. Non-responsiveness at the very least delays submission, and at the worst may jeopardize the submission of the manuscript altogether. Transparency and fairness in the application of standards are essential to prevent breach of confidence.

The important issues that should be included in any discussion of authorship include:

1. Who will be named as an author if the study is submitted for publication, or if it is publically presented?
2. What will the order of authorship be?
3. For each of the anticipated authors, what are their responsibilities and expected contribution to the work?
4. Are there any intellectual property issues that need to be determined prior to publication?

CONFLICT MANAGEMENT AND RESOLUTION

Issues or disputes concerning authorship may arise in advance of, during, or after publication. Conflicts over the attribution of credit can arise as a result of legitimate differences of opinion over the relative importance of an individual's contribution to the research or a change in contribution over the course of the study.

The following procedures are recommended to guide faculty, students, and staff in resolving such conflicts. These procedures do not consider circumstances where there are allegations of misconduct in research such as fabrication or falsification of data, plagiarism, or deviation from research and scholarly practices that are commonly accepted within the academic and scientific communities. Boston University and Boston Medical Center maintain formal policies and procedures for such matters.

1. Informal local resolution among the parties: if at all possible, authorship disputes should be resolved informally by discussion and mutual agreement within the research group. This process may entail the review of internal decisions on authorship, prior agreements between co-authors (if they exist), and discussions of the Guidelines as they apply to the particular dispute. Discussions among the individuals concerned, with the intent to resolve the problem, are meant to foster a collegial pattern of conflict resolution. The group may invite a neutral senior investigator informally to assist and facilitate them in discussing the resolution. It is expected that most disputes will be resolved at this level.
2. If a resolution cannot be accomplished among the participants, they should seek input from a neutral third party. This may involve one of the following:
 - a. Resolution at the department level: If the dispute cannot be resolved at the local level, it is the responsibility of the Department Chair/Section Chief or his/her designee to take the lead in attempting to negotiate a resolution of the dispute acceptable to the parties, assuming that the Department Chair/Section Chief is not a direct party to the dispute and does not have a conflict of interest. If multiple departments are involved with the research project it may be best to go directly to the University Ombuds or BMC's Medical Director, Research.
 - b. Resolution using the University Ombuds: The Boston University Office of the Ombuds (<http://www.bu.edu/ombuds/>) is an independent, impartial, informal, and confidential resource available to all members of the Boston University community. The Ombuds can advise individuals and groups on strategies to prevent or address conflict on research teams. Speaking with the Ombuds about authorship disputes can be a productive step toward resolving the issue. Please note that while the Ombuds may take a variety of steps towards addressing the concern, the Office is empowered to provide informal assistance only. Formal actions are the purview of other academic offices.
 - c. If the dispute involves doctoral research by a student, this student should refer the matter to the chair of the dissertation committee (assuming that the chair is not the Principal Investigator of the project nor the student's mentor), and/or the Director of Graduate Studies of the student's program.

3. Resolution at the Dean or Chief Medical Officer Level: If any of the steps outlined above are not able to yield resolution, the Dean or Chief Medical Officer may work to negotiate a resolution of the dispute acceptable to the parties.

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