



Responsible Authorship and Publication



Office for the Protection of Research Subjects (OPRS)

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About the Source Material

The Collaborative Institutional Training Initiative (CITI) web based education program, developed by the University of Miami and the Fred Hutchinson Cancer Research Center, offers training in Human Subjects Research, the Responsible Conduct of Research, and Good Clinical Practice. CITI is currently used by over 1130 participating institutions and facilities from around the world and offers online course material in more than seven different languages. CITI RCR was developed with public funds and thus allowed access to material used to create these booklets.

Introduction to Responsible Authorship and Publication

Research publications provide benefits to society by widely sharing new discoveries and providing new insights on long established beliefs. A research publication is the act of making a public assertion. This act carries social and ethical expectations and responsibilities. Peer reviewers must be alert to situations which can compromise the integrity of authors seeking publication. This booklet provides an overview of the issues involving publication and authorship as well as a model academic policy on authorship. Case studies and references are also provided.

Responsible Authorship and Publication

Public Expectations

The research community relies on prompt and open dissemination of research findings and the ready availability of intellectual property to the benefit of society. Once data and research materials are published, the public gains access to them and professionals within the discipline can then challenge or corroborate the new findings. Some ideas and results quickly become part of society's collective wisdom, while others are perceived as controversial. Medical findings that appear in scientific publications are often reported in the media and can influence the recommendations healthcare personnel make to their patients. For this reason, investigators have an ethical responsibility to the public.

Peer-reviewed scholarly and scientific literature is used as a reference by researchers and the public alike. When researchers submit their ideas and findings to journals, editors and peer reviewers criticize the draft manuscripts to identify the strengths and weaknesses of the work. Based on their input, authors revise their writing, which ultimately gets incorporated into a print or online publication. For the authors of scholarly works, articles provide credit for promotions, grants, and recognition. Academic institutions will review a publication record when considering a candidate for tenure, funding for new research projects, and awards.



Publication Rights

The legal, financial, ethical, and publication terms set forth in sponsored research agreements apply to intellectual property developed not only by faculty and staff but also by students and other individuals participating in a project, whether or not they are paid by the institution.

Sponsored research agreements (also true for PI-initiated agreements) may, with the approval of the principal investigator/ institutions, provide for a publication delay in order to protect the potential patentability of any invention or discovery described in the publication, and to give the sponsor an opportunity to comment. Most academic institutions do not allow sponsors to interfere with the publication process for research funded at universities and other education facilities.

Researchers should consider the implications of giving sponsors veto power over their publications. The International Committee of Medical Journal Editors guidelines state:

Researchers should not enter into agreements that interfere with their access to the data and their ability to analyze it independently, to prepare manuscripts, and to publish them. Authors should describe the role of the study sponsor(s), if any, in study design; in the collection, analysis, and interpretation of data; in the writing of the report; and in the decision to submit the report for publication. If the supporting source had no such involvement, the authors should so state. Biases potentially introduced when sponsors are directly involved in research are analogous to methodological biases of other sorts. Some journals, therefore, choose to include information about the sponsor's involvement in the methods section."

In order to determine the impact of the publication on the underlying intellectual property, investigators should consult with the patent office and general legal counsel at their institution if they are interested in pursuing commercialization of any invention/discovery discussed in a proposed publication. (At USC such issues should be directed to USC Stevens Institute for Innovation: <http://stevens.usc.edu/index.php>).

Credit and Criteria for Authorship

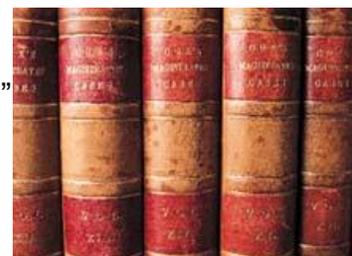
When a graduate student, postdoctoral fellow or technician first comes to a laboratory or when colleagues collaborate in a multidisciplinary project a discussion should take place regarding the practice of credit and authorship.

Problems can arise when scholars hold differing opinions regarding the criteria for authorship. Some hold the view that an author should vouch for the entire content of an article to which their name has been attached while others believe an author should only be accountable for their own portion of the work. For example, a clinician who provided the blood samples for a study, without which the research could not have been done, might feel entitled to authorship. Others might suppose the clinician should receive an acknowledgment not authorship.

In order to avoid a misunderstanding, it is important for research teams to discuss early on how credit and recognition will be shared once the work is completed. The process of responsible authorship begins before the writing of a manuscript, with good scientific study design and with researchers abiding by the ethical guidelines of their respective institutions regarding conflicts of interest and the humane treatment of animals and human subjects.

Status and Publication

Researchers should have an understanding of who among them will have primary responsibility for the writing, submission, and editing required for a paper. "First authorship" is important in the biomedical sciences, because the first



author's name is used by the major biomedical periodical database (Index Medicus) to cite the paper. But different disciplines assign different meanings to the placement of authors. The position

of last author may be reserved for the principal investigator in some fields. In others, the senior person is first, with the last author having the smallest contribution. Each party should establish an understanding beforehand, regarding what kind of work merits authorship, with the knowledge that, as the research project progresses, authors and the positions of their name's in a list of may change.

According to USC guidelines for Assigning Authorship, dissertation committee chairs, advisers, heads of labs or research teams, should not insist on being listed as a n author of a publication or research product, based solely on their provision of support or by virtue of their position as adviser. Furthermore, acquisition of funding and provision of technical services, patients, or materials, are not in themselves sufficient contributions to justify identification as a creator or author if these actions were not accompanied by creative intellectual contributions.

Translation of a work from one language to another is a special type of authorship. Among the arts and humanities, "Translated by..." should appear alongside the author(s) of the original work, both on the work itself and in the bibliographic references. In other fields, primarily the sciences, translation of a work is considered more of a service. In such fields, translators may be credited among acknowledgments, but should be, at a minimum, acknowledged with the phrase "Translated by..."

Ghost Authorship and Unwarranted Recognition

In rare cases researchers or sponsor offer financial or other tangible goods in exchange for the use of a credible researcher's name on a publication in order to add the appearance of credibility to the findings. This form of deception involves awarding authorship to someone who is either unrelated or only peripherally related with the project.

Ideally, academic authority is established by producing credible contributions to the scientific literature. However, some institutional or social leaders will use their authority to become authors without doing the appropriate work related to the article's content. It is a deceptive practice to grant co-authorship to an individual because of his or her status. By the same token, it would be equally inappropriate to confer authorship to a student or lab technician if the student or technician did not significantly contribute to the conception or analysis of the findings being published.

Peer Review

Good peer review improves the quality of a grant application or paper. Just as major funding agencies like the NIH and NSF require peer review of grant applications, so do a majority of academic journals prior to publication of scholarly research.

The process of peer review is based on the idea that, because academic inquiry is specialized, peers with similar expertise are often the best judges of the quality of work being published in their field.

Peer review of articles takes place after the manuscript is submitted to a publication. An editor may send the paper to members of the journal's advisory board or to external reviewers who have expertise in the subject of the article. Although the author's identity is usually known to the reviewer, the reviewer's identity is not known to the author. Peer reviewers are expected to provide the editor with a document that describes any problem found in the research, puts the research into perspective, notes whether appropriate credit has been given to the field, comments on the originality of the work, describes whether the research design is adequate for the conclusions written, and states whether the grammar is correct and the writing style understandable. Each reviewer sends comments back to the editor, who considers them and makes a determination as to whether the paper should be accepted as is, accepted with revisions, or rejected.

Peer review of grant applications follows a slightly different path. Investigators submit grant applications to funding agencies, usually in the government, and the agencies have committees that assess the quality of the application. Government agencies differ in how they assess research at various stages, including which projects to fund, how the projects will be monitored, and how project will be evaluated for publication.

Seven key components of good peer review are*:

1. **Responsiveness:** Reviewers should be able to complete reviews in a timely fashion or perform the review.
2. **Competence:** Reviewers should accept an assignment only if he or she has adequate expertise.
3. **Impartiality:** Reviewers should be as objective as possible in considering the article or application and decline if possible personal or professional bias.
4. **Confidentiality:** Material under review is privileged information and should not be shared with anyone outside the review process unless doing so is necessary and is approved by the editor or funding agency.
5. **Exceptions to Confidentiality:** If a reviewer becomes aware, based upon reading a grant application or a submitted manuscript, that his or her research may be unprofitable or a waste of resources, it is considered ethical to discontinue that line of work.

6. **Constructive Criticism:** Reviewers should acknowledge positive aspects of the material under review, assess negative aspects constructively, and indicate where improvements are needed.
7. **Responsibility to Research:** Members of the research profession are expected to engage in peer review even though financial compensation is seldom provided.

* Michael Kalichman, Director of the University of California San Diego Research and Ethics Program. "Seven Key Components of Good Peer Review": Responsible Conduct of Research: An Introductory Guide (2001).

When a group, large or small, conducts the work, the group should identify the individuals who will accept direct responsibility for the manuscript. When submitting a manuscript prepared by a group, the preferred citation, all individual authors as well as the group name should be clearly indicated to the journal. Each author should have participated sufficiently in the work to take public responsibility for appropriate portions of the content. Journals will typically identify the primary author and list other members of the group in the acknowledgements.

Redundant Publication and Self-plagiarism

Labeling data as a new finding in order to republish one's work is a form of deception in publication.

According to the International Committee of Medical Journal Editors (ICMJE), redundant publication is a form of inflating the publication record of an investigator or research team.

Such cases, in which data are duplicated and then published as new findings, are called "self plagiarism." However, it is important for readers to distinguish "self-plagiarism" from "secondary publication". When previously published data is relevant to a new finding from the same investigator or research team, it may be permissible to resubmit the data for publication, provided that the repetition is disclosed in print and all authors of the previous publication have consented.

Resolving Disputes in Authorship

If a conflict arises between a junior scientist and a senior scientist regarding authorship, the disagreement should first be addressed among the group of authors and the project leader. If the research team is unable to resolve the dispute, the junior scientist can seek guidance from other members of the department, student organizations, representatives in an office of postdoctoral affairs, or at USC, the Office of the Vice President of Research.

Conclusion

The inclusion of an author on a research paper should be based on the extent of their contributions to the conception, design, analysis and interpretation of data or acquisition of data.

Peer review is a vital step in producing publications of quality data and meaningful findings. Getting appropriate credit and taking responsibility for work are key issues in authorship. It is important that students, faculty, postdoctoral fellows, and others involved in an academic or scientific investigation discuss the allocation of roles before they begin or continue a project. Misunderstandings can arise, but resources are available to help resolve them, as early in the process as possible.



The principal investigators bear overall responsibility for conduct of a study, including future publications, and must inform all participants of their roles, train them in the Responsible Conduct of Research, and obtain a written confirmation that they have done so.

Harvard Medical School: Policy on Authorship

AUTHORSHIP

1. *Everyone who is listed as an author should have made a substantial, direct, intellectual contribution to the work. For example (in the case of a research report) they should have contributed to the conception, design, analysis and/or interpretation of data. Honorary or guest authorship is not acceptable. Acquisition of funding and provision of technical services, patients, or materials, while they may be essential to the work, are not in themselves sufficient contributions to justify authorship.*
2. *Everyone who has made substantial intellectual contributions to the work should be an author. Everyone who has made other substantial contributions should be acknowledged.*
3. *When research is done by teams whose members are highly specialized, individual's contributions and responsibility may be limited to specific aspects of the work.*
4. *All authors should participate in writing the manuscript by reviewing drafts and approving the final version.*
5. *One author should take primary responsibility for the work as a whole even if he or she does not have an in-depth understanding of every part of the work.*
6. *This primary author should assure that all authors meet basic standards for authorship and should prepare a concise, written description of their contributions to the work, which has been approved by all authors. This record should remain with the sponsoring department.*

ORDER OF AUTHORSHIP

Many different ways of determining order of authorship exist across disciplines, research groups, and countries. Examples of authorship policies include descending order of contribution, placing the person who took the lead in writing the manuscript or doing the research first and the most experienced contributor last, and alphabetical or random order. While the significance of a particular order may be understood in a given setting, order of authorship has no generally agreed upon meaning.

As a result, it is not possible to interpret from order of authorship the respective contributions of individual authors. Promotion committees, granting agencies, readers, and others who seek to understand how individual authors have contributed to the work should not read into order of authorship their own meaning, which may not be shared by the authors themselves.

1. *The authors should decide the order of authorship together.*
2. *Authors should specify in their manuscript a description of the contributions of each author and how they have assigned the order in which they are listed so that readers can interpret their roles correctly.*
3. *The primary author should prepare a concise, written description of how order of authorship was decided.*

IMPLEMENTATION

1. *Research teams should discuss authorship issues frankly early in the course of their work together.*
2. *Disputes over authorship are best settled at the local level by the authors themselves or the laboratory chief. If local efforts fail, the Faculty of Medicine can assist in resolving grievances through its Ombuds Office.*
3. *Laboratories, departments, educational programs, and other organizations sponsoring scholarly work should post, and also include in their procedure manuals, both this statement and a description of their own customary ways of deciding who should be an author and the order in which they are listed. They should include authorship policies in their orientation of new members.*
4. *Authorship should be a component of the research ethics course that is required for all research fellows at Harvard Medical School.*
5. *These policies should be reviewed periodically because both scientific investigation and authorship practices are changing.*

Case Studies

I. The Grateful Author

Dr. B. Good, a young Assistant Professor in the Psychology Department at Big Time University, has worked out a novel approach to evaluate cognitive skills in elderly people. The approach might be extremely useful in patients experiencing early signs of dementia and for monitoring the effectiveness of interventions to slow the progression of the underlying condition. Over the course of several months, he discussed his ideas with one of his colleagues, Dr. S. Fine, a Professor in the same department and a noted clinical psychologist. Some months later, Dr. Fine was surprised to find a first-draft copy of a manuscript in her mailbox, describing the theory that Dr. Good developed, with the authors listed as B. Good, S. Fine, and M. Desperate. Dr. Desperate is a Professor and the Chairman of the department in which both Drs. Good and Fine work. Dr. Fine is unaware of any substantive contribution that Dr. Desperate has made to this largely theoretical manuscript.

Dr. Fine approaches Dr. Good, saying that she feels her own contributions (limited merely to a series of brief discussions) were minimal, at best, and requests that her name be removed from the author list. She suggests it would be more appropriate to simply have an acknowledgment at the end of the manuscript. Dr. Fine further queries Dr. Good concerning Dr. Desperate's role in the manuscript, saying that his name never came up in any of their prior discussions of the topic. Dr. Good explains that Dr. Desperate is the Chairman of the department. Dr. Good states that Dr. Desperate is an established and respected academic psychologist, and that the two have briefly discussed the possibility of performing some studies to test the theory posed in the manuscript.

Dr. Fine then confronts Dr. Desperate directly about his listing as a coauthor on the manuscript. Dr. Desperate vigorously defends his right to be listed as a coauthor, saying that he and Dr. Good have had several discussions about doing some future studies along the lines described by Dr. Good. Dr. Desperate advises Dr. Fine to "mind your own business."

1. *Was Dr. Good correct to include Drs. Fine and Desperate as coauthors?*
2. *What citation, if any, of Dr. Fine's or Dr. Desperate's "contributions" should be made?*
3. *Were Dr. Fine's actions correct in this scenario? Why or why not?*
4. *Was coercion a possible factor (implicit or explicit) in this scenario?*
5. *What action, if any, should Dr. Fine take if she discovers subsequently that the manuscript has been submitted for publication without alteration of the author list?*

II. Dr. Olivieri

Between 1996 and 2002, Dr. Nancy Olivieri was testing a drug for people with thalassemia, a disease characterized by the inability to make one of the two proteins of hemoglobin. If not treated, the disease is usually fatal in childhood. The drug was an oral formulation, meant as an alternative to similar, injectable drugs already in use. Although the drug showed promise in the early 1990s, Dr. Olivieri had evidence in 1996 that patients taking the drug had dangerously high iron concentrations. Dr. Olivieri reported the negative findings to the sponsoring



company, which soon afterward withdrew funding for her trial and instructed her not to speak about or publishing her results. Although Dr. Olivieri was subject to a nondisclosure agreement, she felt obligated to report her findings since they presented a risk to the health of patients. She published her results from the thalassemia study in the *New England Journal of Medicine* in 1998. Due to the violation of the nondisclosure agreement, the sponsor of the study threatened Dr. Olivieri and the University of Toronto with legal action and she was dismissed from the university as a result of the controversial study. She was ultimately rehired, and the disputes between the university and the hospital where she worked were resolved confidentially in November 2002.

1. *What should Sanjay do?*
2. *Which of these problems should Sanjay tackle first?*
 - a. *Publicist*
 - b. *Tech Transfer*
 - c. *Students*
 - d. *His Chair*
3. *Is there anything he could have done to assure that things went more smoothly when he was ready to publish his results?*

III. Chair as an Author

Dr. Messelman Killinger is the Chair of the Sociology Department at Big University who has a policy about authorship that he discusses with each new member who joins his group. He states that only those who have made a significant intellectual contribution to an experiment will be included on any paper. He also states that he is the final authority about what is defined as a significant intellectual contribution, should a disagreement arise. He further states that he will be included as last author on any paper that is the result of research done in his lab.



David Tonkyn is a speech pathology post-doc in Killinger's group and is working to characterize subsonic vocalization and communication among Great Ape species. Based on a number of recordings and long hours of observation in the field, David suspects that he has discovered an as of yet unidentified series of calls or sound patterns that is used to establish territory and harem control.

Haruko Tomonaga, a grad student in Killinger's group, has worked very closely with David on his acoustical studies. She has done most of the trouble shooting with David's recording equipment and has optimized the gear for working in the wild. She also developed a novel method of filtering the noise from subsonic ape sounds.

Benson Zophar is a first year graduate student who is currently doing a six-week rotation through Killinger's lab. Benson participates in the final experiment of this project, which shows that when subsonic wild ape sound recordings are replayed to gorillas in captivity at Disney's Animal Kingdom, the responses observed are not unlike those observed in the wild. These data suggest that the Great Apes may have a novel communication system that was lost during evolution toward human primates.

Killinger encourages David to submit the data for publication as quickly as possible. David does the writing, gives the paper to Haruko for review, and then presents the data at the lab meeting the following week. Following the meeting, Killinger, David, Haruko and Benson discuss authorship assignments for the paper. David makes the point that since Haruko offered novel ideas to the project and helped in trouble-shooting and in the review of the paper, she should be included as second author. He further argues that although Benson assisted on the last experiment of the project, he did not contribute intellectually and therefore should not be listed as an author. David states that Benson should be included in the acknowledgements for his contributions to the project. Finally, David states that Killinger should be included as last author on the paper since the work was done in his lab and supported by funds from his grant. All present are in agreement with David's decision, and the paper is submitted.

1. *Do you have any problems with this arrangement?*
2. *What are the elements of authorship and did all characters in the case meet the criteria?*
3. *What has Dr. Killinger contributed to this work? Is it sufficient for authorship on this paper?*

Resources

Uniform requirements for manuscripts submitted to biomedical journals:

http://www.icmje.org/ethical_1author.html

Harvard University authorship guidelines:

<http://www.hms.harvard.edu/integrity/authorship.html>

Stanford University authorship guidelines:

<http://rph.stanford.edu/2-8.html>

Emory University:

www.orc.emory.edu/ORC_documents/AuthorshipandPlagiarism_Banja.pdf

Publication and Authorship Practices:

http://www.aps.org/policy/statements/02_2.cfm

Engineering and research:

<http://www.onlineethics.org/default.aspx?id=19049>

Authorship roles:

<http://www.onlineethics.org/resources/cases/21332.aspx>

CITI Program:

www.citiprogram.org

**University of Southern California Guidelines for Assigning Authorship and for
Attributing Contributions to Research Products and Creative Works:**

http://research.usc.edu/files/2011/07/URC_on_Authorship_and_Attribution_10.20111.pdf

USC Contacts

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University Park Institutional Review Board

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<https://oprs.usc.edu/education/mentor/>

Office of Contracts and Grants-UP

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