INTRODUCTION

Assigning authorship on a scientific or scholarly manuscript or creative expression performs a dual role. It apportions credit for the contribution of each individual while also explicitly assigning responsibility. Designated authorship allows others to assess the relative input of each author to the impact of an intellectual endeavor, including original scientific research, words and images, and works of art, music or dance. These scientific or scholarly manuscripts or creative expressions might be intended to disseminate innovations, discoveries or novel ideas, review existing work, or solely for educational purposes. Authorship roles are used as important metrics in establishing renown, advancing academic standing, and facilitating grant funding of individuals.

APPLIES TO

All faculty, staff (including postdoctoral researchers and fellows), students, and trainees affiliated with The Ohio State University involved in the generation of scientific or scholarly publications or presentations, or creative expressions, in whatever format, to the scientific, academic, and lay communities. The sharing of these guidelines with collaborators outside of The Ohio State University is encouraged.

GENERAL PRINCIPLES

The Ohio State University is committed to ensuring that appropriate credit is provided to all individuals who conduct scientific or scholarly activities. Under the University Research Data Policy, as per national practice, the Principal Investigator (PI) of a project has the right and responsibility to ensure that all information or creative expression is accurately reported and the PI is charged with determining where and when the information or creative expression is published or presented. Further, it is the responsibility of the PI to ensure that all persons listed as authors on publications or presentations meet the commonly accepted criteria for authorship credit within their specific discipline; that only such persons are listed as authors; and that credit is apportioned fairly and accurately.

For many disciplines and some journals, published guidelines exist for assigning authorship (e.g., ICJME, COPE, various professional societies). In the absence of a published guideline for a specific discipline, the University Research Committee has developed these guidelines for assigning authorship based on the following core principles:

1. **Defining Rights and Responsibilities of Authorship**

   Generally speaking (and per ICMJE guidelines), in order to be an author on a scientific or scholarly work, an individual should have:

   a. made a substantial intellectual contribution to the conception or design or the generation and analysis of the information;
   b. participated in the drafting or revision of the manuscript regarding intellectual content;
   c. participated in a final review and approval of the manuscript prior to publication;
   d. agreed to be accountable for all aspects of the work presented (we encourage using the Author Contributions Worksheet to identify specific contributions)
2. **Authorship Roles**

   a. **Lead Author (also known as the First or Primary Author)** - This is the person typically who has done the majority of the work and drafting of the manuscript. The lead/first author takes on additional responsibility for the accuracy and integrity of the manuscript.

   b. **Co-Authors** - anyone contributing to the manuscript such that they meet the criteria established for authorship (see 1 above). Co-authors are responsible for reviewing and approving the final submission.

   c. **Senior Author** - Typically this is the PI or senior most person involved in the work, often also serves as the corresponding author, and has additional responsibility for the accuracy and integrity of the manuscript.

   d. **Corresponding Author** - takes primary responsibility for the submission and communication with the publisher and responds to any questions about the work during and after publication.

   e. **Acknowledgments** - people who participate but do not meet the criteria established for authorship are listed as acknowledgments.

3. **Unacceptable Authorship Practices**

   The following authorship practices are not in line with the criteria established for authorship and the values of Ohio State and should not be allowed:

   a. **Guest Authorship** - the practice of assigning authorship to someone who has not participated in the work, simply to honor that person or to provide additional credibility to the submission based on the status or standing of the guest author.

   b. **Gift Authorship** - the practice of assigning authorship to someone who has not participated in the work, to reward them or provide an unearned benefit.

   c. **Ghost Authorship** - the practice of not providing named credit to individuals who have made substantial contributions to the work or in the writing of the manuscript. This often is seen with the use of professional writers who are not credited or acknowledged. Writing activities alone, such as writing assistance, technical editing, language editing, and proofreading, without other contributions may not qualify for authorship, but should be acknowledged.

4. **Defining Order of Authorship**

   The order of authorship can vary widely between scientific disciplines, among publishers and specialty journals, and therefore, it is can be difficult to interpret the role of each author to a scientific or creative effort. In most disciplines, authorship is based on the extent of intellectual and editorial contribution, with the first author typically representing the individual(s) who carried out the majority of the research and writing, while the PI of the project is typically listed as the last, or the senior author. The senior author is, in many cases, also the ‘corresponding’ author.

   However, in some disciplines or specialties, the order of authorship may be dictated strictly by alphabetical order of the authors or in some other manner. Therefore, explicitly stating the role and contribution of each author will enhance the transparency and credibility of the information as well as accurately assign credit for purposes of academic advancement and/or building a reputation.

   It is encouraged to seek advice on the order of authorship by reviewing the journal’s website.

**AUTHORSHIP DISPUTES**

The university handles disputes regarding authorship as academic matters under the Research Data Policy. Any faculty, staff or student who believes that they were not appropriately credited in any scientific or scholarly work or presentation can submit their concern to their academic department as outlined in the Research Data policy. In the event that the concern includes a credible allegation of plagiarism, the matter will be reviewed under the University Policy and Procedures Concerning Research Misconduct by the Office of Research.
BEST PRACTICES

The following are activities that all authors need to do to ensure the integrity of their scientific and scholarly works:

- Provide accurate and complete disclosure of all potential conflicts of interest, including financial, personal, and professional issues.
- Provide accurate and complete disclosure of all funding supporting the work being reported. If there are multiple funding sources, authors should consider specifying what funding paid for which specific parts of the work (e.g., manufacturing, specialized services, or a clinical trial).
- Provide accurate and complete disclosure of the specific contributions of each author.
  - Individuals may want to consider using CRedit https://casrai.org/credit/ for this purpose. CRedit is a system that allows individuals to specify their specific roles (contributions) to a scholarly output in a uniform, standardized way.
  - The URC has provided an Authorship and Contribution worksheet that can be used to designate individuals contributions (attached).
- Develop a unique author identity using OrCID (or a similar unique identifier) https://orcid.org/.
  - ORCID provides a perpetual digital identifier that is unique to an individual, and therefore distinguishes a person from every other researcher. Moreover, since it can be integrated through workflows such as grant and manuscript submissions, and peer review, it ensures that a person will get appropriate credit for their research activities. More importantly, if a person's grant and manuscript are linked through the same ORCID ID, it allows the person's funding information to be imported to their manuscript, and therefore reports the person's publication activities accurately to the funding agency/sponsor.
  - A person’s ORCID record can be linked with their professional information through other interfaces such as Scopus, ResearcherID or LinkedIn. VITA, the OSU system for P&T, also recognizes ORCID, so that a person’s work to input each detail of their research activities will be minimal.
- Follow all data sharing, security and retention requirements
- Utilize collaboration agreements that talk about authorship expectations

REFERENCES AND RESOURCES

- COPE Website on Authorship and Contributorship - https://publicationethics.org/authorship
- Cooperation & Liaison between Universities & Editors (CLUE): Recommendations on Best Practice - https://www.biorxiv.org/content/early/2017/05/19/139170
- OSU University Policy and Procedures Concerning Research Misconduct http://orc.osu.edu/files/Misconduct_Policy.pdf
- McNutt et al., 2018. Transparency in author's contributions and responsibilities to promote integrity in scientific publication. www.pnas.org/cgi/doi/10.1073/pnas.1715374115

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Author and Contribution Disclosure Statement

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Institution:

I had a role in:

1. **Conceptualization**: Ideas: formulation or evolution of overarching research goals and aims.
   
   Yes ☐  No ☐

2. **Data curation**: Management activities to annotate (produce metadata), scrub data and maintain research data (including software code, where it is necessary for interpreting the data itself) for initial use and later re-use.

   Yes ☐  No ☐

3. **Formal analysis**: Application of statistical, mathematical, computational or other formal techniques to analyze or synthesize study data.

   Yes ☐  No ☐

4. **Funding acquisition**: Acquisition of the financial support for the project leading to this publication.

   Yes ☐  No ☐

5. **Investigation**: Conduction a research and investigation process, specifically performing the experiments, or data/evidence collection.

   Yes ☐  No ☐

6. **Methodology**: Development or design of methodology; creation or models.

   Yes ☐  No ☐

7. **Project Administration**: Management and coordination responsibility for the research activity planning and execution.

   Yes ☐  No ☐

8. **Resources**: Provision of study materials, reagents, materials, patients, laboratory samples, animals, instrumentation, computing resources, or other analysis tools.

   Yes ☐  No ☐
9. **Software:** Programming, software development; designing computer programs; implementation of the computer code and supporting algorithms; testing of existing code components.

   Yes ☐   No ☐

10. **Supervision:** Oversight and leadership responsibility for the research activity planning and execution, including mentorship external to the core team.

   Yes ☐   No ☐

11. **Validation:** Verification, whether as a part of the activity or separate, of the overall replication/reproducibility of results/experiments and other research outputs.

   Yes ☐   No ☐

12. **Visualization:** Preparation, creation and/or presentation of the published work, specifically visualization/data presentation.

   Yes ☐   No ☐

13. **Writing -original draft:** Preparation, creation and/or presentation of the published work, specifically writing the initial draft (including substantive translation).

   Yes ☐   No ☐

14. **Writing – review & editing:** Preparation, creation and/or presentation of the published work by those from the original research group, specifically critical review, commentary or revision – including pre- or post- publication stages.

   Yes ☐   No ☐

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