DEPARTMENT OF THE ARMY
WALTER REED ARMY INSTITUTE OF RESEARCH
503 ROBERT GRANT AVENUE
SILVER SPRING, MD 20910-7500

FCMR-UWZ (1oo)   27 January 2022

MEMORANDUM FOR All Personnel, Walter Reed Army Institute of Research (WRAIR)

SUBJECT: WRAIR Policy #54, Authorship of Scientific or Scholarly Publications

1. References.

   a. Centers for Disease Control and Prevention (CDC), Office of the Associate Director for Science (Authorship Policy), CDC-GA-2005-08, 25 August 2016.

   b. Department of Defense Instruction (DODI) 3210.7 (Research Integrity and Misconduct), 15 October 2018.

   c. Environmental Protection Agency (EPA), Scientific Integrity Committee (Scientific Integrity: Best Practices for Designating Authorship), Publication #601K16001, July 2016.

   d. International Committee of Medical Journal Editors (ICMJE) (Recommendations for the Conduct, Reporting, Editing, and Publication of Scholarly Work in Medical Journals), December 2019.

   e. National Institutes of Health (NIH), Office of the Director (Guidelines and Policies for the Conduct of Research in the Intramural Research Program at NIH), Sixth Edition, November 2019.

   f. NIH Office of Intramural Research (Processes for Authorship Dispute Resolution), 11 December 2015.

   g. U.S. Medical Research and Development Command (USAMRDC) Policy #65 (Contracting Officer's Representative Authorship/Co-Authorships).

   h. WRAIR Policy #35 (Policy and Procedures for Addressing Allegations of Research Misconduct).

   i. WRAIR Policy #55 (Research Ethics and Integrity Consultation Service).

2. History. This version of the policy revises and supersedes the previous version, which was issued 19 March 2021. This version of the policy is effective upon signature and will remain in effect until amended or rescinded.

3. Purpose. This policy establishes criteria and best practices related to authorship of

---

**This supersedes WRAIR Policy #54, dtd 19 March 2021.

scientific or scholarly work produced by WRAIR personnel.

4. Definitions.

    a. Author: An individual who satisfies both criteria specified in this policy for authorship of a scientific or scholarly work.

    b. Credit: Acknowledgment of a named individual's substantial contributions and/or authorship of a scientific or scholarly work that is included in the published or publicly disseminated version of that work.

    c. Publication: The issuing of a work in a journal, book, periodical or other formal venue for communication to the public and inclusion in the public record.

    d. Public dissemination: The issuing of a work in an informal venue for communication to the public and inclusion in the public record, such as a popular website, open-access database or press release.

    e. Senior author(s): An individual or individuals who meet both criteria for authorship and who play a leading role in the development of a scientific or scholarly work by virtue of their expertise, experience, reputation and/or position. (A senior author is not necessarily a first author, last author or corresponding author.)

    f. Scientific or scholarly work: Creative activity that is (i) aimed at the discovery of new knowledge, integration of knowledge leading to new understanding, or development of new technologies, methods, materials or uses and (ii) potentially appropriate for publication in a peer-reviewed academic venue.

    g. WRAIR personnel: All U.S. Military and Civilian employees, Foreign Service Nationals/Locally Employed Staff, contractors, cooperative agreement employees, guest researchers, special government employees, volunteers, fellows, students, and trainees of WRAIR and its satellite activities.

5. Background. WRAIR researchers publish extensively in academic and professional journals, which are the primary means of documenting for the scientific record the objectives, methods, findings, and conclusions of WRAIR research projects and other scholarly activities.

Authorship of these publications is an explicit way of assigning responsibility and giving credit for intellectual work, and must honestly reflect actual contributions to the final product. Authorship is important to the reputation, promotion, and grant support of the individuals involved as well as to WRAIR's overall reputation and impact. Authorship is a perennially contentious issue in science, and researchers are consistently faced with questions about who is an author, in what order authors should be listed, and how

other contributions should be acknowledged. Disputes over assigning credit for authorship and other contributions can take a considerable toll on the good will, effectiveness, and reputation of the individuals involved and WRAIR's research community as a whole.

This policy is intended to promote high standards of ethics and integrity for authorship at WRAIR and its satellite activities and to provide practical steps to prevent and resolve disputes about authorship. It is consistent with internationally recognized standards for appropriate assignment of credit for authorship and other contributions.

6. Applicability and Scope. This policy applies to all WRAIR personnel who publish or publicly disseminate scientific or scholarly work conducted as part of their official duties. The policy does not apply to the creation and dissemination of policies and procedures, strategic communications, or other official publications of WRAIR.

7. Policy.

    a. Authorship.

       (1) An individual is an author of a scientific or scholarly work if and only if they meet both of the following criteria:

       (a) The individual has made a substantial contribution to the scientific or scholarly content of the work, such as by contributing substantially either to the conception, design, or scholarship essential for the work, or to the acquisition, analysis, or interpretation of data for the work; AND

       (b) The individual has participated in drafting the work, or significant portions of the work, or critically reviewed or revised the scientific or scholarly content of the work.

       (2) Only individuals who satisfy the criteria of authorship for a scientific or scholarly work may be credited as authors of that work. This prohibits assigning authorship credit solely on the basis of seniority, acquisition of funding, provision of access to participants, or provision of specimens, data, facilities, materials, or other resources. See Appendix A: Prohibited Authorship Practices.

       (3) All individuals who satisfy the criteria of authorship for a scientific or scholarly work must be credited as authors of that work.

    b. Author Responsibilities.

       (1) In addition to meeting the criteria for authorship stated in 7.a.1, WRAIR personnel who participate as an author of a scientific or scholarly work must:

(a) Approve the version of the work to be published or publicly disseminated, as well as any significant revisions undertaken in the peer review process;

(b) Be accountable for their own contributions to the work;

(c) Have confidence in the accuracy and integrity of their co-authors' contributions to the work; and

(d) Declare any relevant conflicting or competing interests related to the work, understood as financial, professional or personal commitments that may compromise or have the appearance of compromising an author's professional judgment.

(2) WRAIR personnel who participate as a senior author of a scientific or scholarly work are responsible for:

(a) Initiating timely discussions about authorship (including order of authorship) and other contributions, both in the early stages of a work's development and as needed in later stages, particularly if individual contributions change over time;

(b) Keeping track of individuals who make substantial contributions to the work over the course of the research lifecycle so that appropriate credit (whether authorship or acknowledgment) is given for those contributions, including contributions made by individuals who are no longer affiliated with WRAIR; and

(c) Being able to identify the contributions of each of the co-authors to the work presented in the final publication.

c. Dispute Resolution. If disputes about assigning credit for authors or contributors or about determining order of authorship occur, the following mitigating steps can be taken.

(1) Direct Dialogue. The parties to the dispute discuss their perspectives with each other and work to reach a mutually acceptable resolution consistent with the terms of this policy and best practices for authorship.

(2) Consultation/Mediation. One or more parties to the dispute request consultation from a member of WRAIR's Research Ethics and Integrity Consultation Service (REICS), or leader not party to the dispute, or a science ombudsperson. Depending on circumstances and need, the individuals consulted may facilitate a confidential mediation process to assist the parties with resolving the dispute.

(3) Peer Panel. If the dispute cannot be resolved through direct dialogue, consultation, or mediation, the parties may agree to present their dispute to a panel of three scientific experts in the work's area of research, which would decide how to

4

resolve the dispute. All parties to the dispute must agree beforehand that they will accept the panel's ultimate decision. Panelists may be drawn from WRAIR personnel or other relevant scientific institutions, and they must have no conflicting or competing interests related to the work. The panel would be appointed by WRAIR's Research Integrity Officer (RIO), who would be responsible for organizing the panel and documenting its decision.

(4) Leader Determination. If the dispute cannot be resolved through direct dialogue, consultation, or mediation, and the parties do not agree to resolve the dispute with a peer panel, the matter will be referred to the Center or Directorate Director and Chief Science Officer for resolution. If the Center or Directorate Director is a party to the dispute, they should recuse themselves and defer to the Chief Science Officer and Deputy Commander. These leaders may choose to consult with the RIO about the decision, and the RIO will assist with documenting and communicating the decision to the parties.

8. Additional Guidance.

a. Given the importance of authorship for professional development and career advancement, serious consideration should be given to the fair distribution of opportunities for authorship.

(1) In most cases, individuals who satisfy the first criterion for authorship given in 7.a.1 (i.e., those who made a substantial contribution to the scientific or scholarly content of the work) should have a fair opportunity to satisfy the second criterion by participating in drafting or critically reviewing/revising the work's scientific or scholarly content within a reasonable period of time. However, it is not always feasible to extend authorship opportunities to all individuals who make substantial contributions to a work, for example, all individuals involved in data collection in large collaborative studies.

(2) Special consideration should be given to affording opportunities for authorship to early-career WRAIR personnel who make substantial contributions to a work, since such opportunities are often essential for their professional development.

b. Appropriate credit should be given for important contributions made to a scientific or scholarly work, even when the individuals who make those contributions do not meet the criteria for authorship. Credit is usually given in an acknowledgment statement in the publication or in an appendix in supplementary material, or by attributing group authorship. See Appendix B: Assigning Credit for Contributions.

c. Personnel who onboard or leave WRAIR during the course of a scientific or scholarly project should be given appropriate credit for their contributions to the work as well as fair opportunity to meet the criteria for authorship outlined in 7.a.1. WRAIR

personnel who are involved in preparing publications from such a project should consider the intellectual contributions, time and effort invested by individuals who are no longer affiliated with WRAIR in earlier stages, as well as those who may have joined mid-stream. For a description of one approach to tracking individuals' contributions to a scientific or scholarly work over time, see Appendix C: Publication Coordinator Role.

d. Appropriate methods for determining order of authorship vary among academic disciplines and publication venues. Authors should follow the standards most relevant to the scientific or scholarly work, and should engage in frank discussions about order of authorship in the early stages of a work's development and as needed in later stages, particularly if individual contributions change over time. Special consideration should be given to affording early-career WRAIR personnel who make appropriate contributions to a work with opportunities to serve as first author of the work.

e. Plagiarism is a form of research misconduct defined as the appropriation of another person's ideas, processes, results, or words without giving appropriate credit. Refer to WRAIR Policy #35 and DOD Instruction 3210.7 for more information about identifying and reporting plagiarism and other forms of research misconduct

9. Point of contact for this memorandum is ███████████, Research Ethics and Integrity Consultation Service (REICS) and Research Integrity Officer (FCMR-UWS), at ███████ or ████████████.

SIGNATURE ON FILE

3 Encls.
1. Prohibited Authorship Practices
2. Assigning Credit for Contributions
3. Publication Coordinator Role

CHAD A. KOENIG
COL, SP
Commanding

Appendix A: Prohibited Authorship Practices

There are various practices of assigning authorship credit for scientific or scholarly publications that are inconsistent with WRAIR policy and widely accepted standards of research ethics and integrity. The following includes regrettably common examples of such prohibited practices:

a. Forged authorship: Assigning authorship credit to an individual who was not involved in producing the work in order to promote the work's publication or prestige, where this is done without the individual's knowledge or permission.

b. Ghost authorship: Failing to assign authorship credit to an individual who meets the criteria for authorship (i.e., making a substantial contribution and participating in drafting or critically revising the work) in order to hide the individual's involvement in the work from editors, reviewers, or readers.

c. Gift authorship: Assigning authorship to an individual who does not meet the criteria for authorship but is given credit in the hope that they will return the favor at some point in the future.

d. Guest authorship: Assigning authorship credit to an individual with a prominent scientific or scholarly reputation who was not involved in producing the work in order to promote the work's publication or prestige.

e. Honorary authorship: Assigning authorship credit to an individual who does not meet the criteria for authorship but is given credit because they occupy a senior position or provided funding or other resources for the work.

f. Orphan authorship: Failing to assign authorship credit to an individual who meets the criteria for authorship.

Sources

Gasparyan, Armen Yuri, Lilit Ayvazyan, and George D. Kitas. "Authorship problems in scholarly journals: considerations for authors, peer reviewers and editors." *Rheumatology International* 33, no. 2 (2013): 277-284.

McNutt, Marcia K., Monica Bradford, Jeffrey M. Drazen, Brooks Hanson, Bob Howard, Kathleen Hall Jamieson, Véronique Kiermer, et al. "Transparency in authors' contributions and responsibilities to promote integrity in scientific publication." *Proceedings of the National Academy of Sciences* 115, no. 11 (2018): 2557-2560.

Appendix B: Assigning Credit for Contributions

In addition to assigning appropriate credit for authorship of scientific or scholarly works, it is important to assign appropriate credit for important contributions made to such works, even when the individuals who make those contributions do not meet the criteria for authorship. WRAIR personnel should consider the following points when deciding how to assign credit for contributions to a scientific or scholarly work:

a. Individuals who make an important contribution to a scientific or scholarly work but who do not qualify as authors should receive credit for their contribution.

b. Credit for contributions is typically noted in an acknowledgments section, study group listing, or appendix of the published or publicly disseminated version of the work.

c. The Contributor Roles Taxonomy (CRediT) identifies the types of contribution to a scientific or scholarly work that typically warrant credit in the published or publicly disseminated version of the work. Some of the CRediT contribution types are listed below, and more information can be found at https://casrai.org/credit/.

d. The question of whether a contributor's role is "substantial" or not can depend on various factors, such as the depth of intellectual engagement; whether or not the activity requires special expertise, a novel approach, or development of new techniques or methods; and whether the activity is essential to the completion of the work. The following types of contribution typically warrant credit and in many cases qualify as a "substantial contribution" to a scientific or scholarly work, therefore satisfying the first criterion of authorship:

    (1) <u>Conceptualization</u>: Ideas; formulation or evolution of overarching research goals and aims.

    (2) <u>Data curation</u>: 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.

    (3) <u>Formal analysis</u>: Application of statistical, mathematical, computational, or other formal techniques to analyze or synthesize study data.

    (4) <u>Investigation</u>: Conducting a research and investigation process, specifically performing the experiments, or data/evidence collection.

    (5) <u>Methodology</u>: Development or design of methodology; creation of models.

    (6) <u>Project administration</u>: Management and coordination responsibility for the

research activity planning and execution.

(7) <u>Software</u>: Programming, software development; designing computer programs; implementation of the computer code and supporting algorithms; testing of existing code components.

(8) <u>Validation</u>: Verification, whether as a part of the activity or separate, of the overall replication/reproducibility of results/experiments and other research outputs.

(9) <u>Visualization</u>: Preparation, creation and/or presentation of the published work, specifically visualization/data presentation.

e. The following types of contribution typically warrant credit, but in most cases do not by themselves qualify as a "substantial contribution":

(1) <u>Funding acquisition</u>: Acquisition of the financial support for the project leading to this publication.

(2) <u>Resources</u>: Provision of study materials, reagents, materials, patients, laboratory samples, animals, instrumentation, computing resources, or other analysis tools.

(3) <u>Supervision</u>: Oversight and leadership responsibility for the research activity planning and execution, including mentorship external to the core team.

f. The types of contribution listed above are not exhaustive, as individuals sometimes deserve credit for making other kinds of special contribution to a scientific or scholarly work.

g. Whenever possible, the different contributions of all authors and contributors as well as their organizational affiliations should be clearly noted in the published or publicly disseminated version of a work.

h. Authors should consider including contributor information in the supplementary materials for a scientific or scholarly work when this is facilitated by the work's publisher.

Sources

Allen, Liz, Alison O'Connell, and Veronique Kiermer. "How can we ensure visibility and diversity in research contributions? How the Contributor Role Taxonomy (CRediT) is helping the shift from authorship to contributorship." *Learned Publishing* 32, no. 1 (2019): 71-74.

Vasilevsky, Nicole A., Mohammad Hosseini, Samantha Teplitzky, Violeta Ilik, Ehsan Mohammadi, Juliane Schneider, Barbara Kern, et al. "Is authorship sufficient for today's collaborative research? A call for contributor roles." *Accountability in Research* 28, no. 1 (2021): 23-43.

Appendix C: Publication Coordinator Role

Large collaborative research projects can pose challenges for assignment of credit and authorship due to their complexity, changes in collaborator roles over time, and involvement of multiple teams, departments, or institutions. Additional challenges often arise at WRAIR in particular because of transitions of personnel, especially Military personnel, in the midst of ongoing research projects.

Personnel who onboard or leave WRAIR or its Directorates during the development or conduct of a scientific or scholarly project should be given appropriate credit for their contributions to the work as well as fair opportunity to meet the criteria for authorship. Accordingly, WRAIR personnel who participate as senior authors are responsible for keeping track of individuals who make substantial contributions to the work over time.

One approach senior authors may adopt for tracking individuals' contributions to scientific or scholarly work is to designate a Publication Coordinator for the work. Other approaches for tracking contributions to complex research projects are also acceptable, as long as the appropriate information is captured. A Publication Coordinator is an author who:

    a. Ensures that the work's authors adhere to WRAIR's authorship standards and that best practices related to authorship are followed;

    b. Arranges and facilitates discussions about authorship and other contributions for the work;

    c. Maintains a record of information about authorship and contributions to the work, potentially including:

        (1) Authors' contact and affiliation information;

        (2) Dates and descriptions of meetings or discussions about authorship;

        (3) Planned order of authorship;

        (4) Contributors to be acknowledged; and

        (5) Relevant changes to author's status or contributions to the work.

The Publication Coordinator does not need to be a corresponding author (who manages communications with external parties about the work) or a lead author (who takes responsibility for the integrity of the work as a whole). However, it may be most efficient for one author to occupy all of these roles for the work.

11