Ethical Guidelines to Publication of Chemical Research

The guidelines embodied in this document were revised by the Editors of the Publications Division of the American Chemical Society in July 2020.

Preface

The American Chemical Society serves the chemistry profession and society at large in many ways, among them by publishing journals which present the results of scientific and engineering research. Every editor of a Society journal has the responsibility to establish and maintain guidelines for selecting and accepting papers submitted to that journal. In the main, these guidelines derive from the Society's definition of the scope of the journal and from the editor's perception of standards of quality for scientific work and its presentation.

An essential feature of a profession is the acceptance by its members of a code that outlines desirable behavior and specifies obligations of members to each other and to the public. Such a code derives from a desire to maximize perceived benefits to society and to the profession as a whole and to limit actions that might serve the narrow self-interests of individuals. The advancement of science requires the sharing of knowledge between individuals, even though doing so may sometimes entail forgoing some immediate personal advantage.

With these thoughts in mind, the editors of journals published by the American Chemical Society now present a set of ethical guidelines for persons engaged in the publication of chemical research, specifically, for editors, authors, and manuscript reviewers. These guidelines are offered not in the sense that there is any immediate crisis in ethical behavior, but rather from a conviction that the observance of high ethical standards is so vital to the whole scientific enterprise that a definition of those standards should be brought to the attention of all concerned.

We believe that most of the guidelines now offered are already understood and subscribed to by the majority of experienced research chemists. They may, however, be of substantial help to those who are relatively new to research. Even well-established scientists may appreciate an opportunity to review matters so significant to the practice of science.

Guidelines

A. Ethical Obligations of Editors of Scientific Journals

1. An editor should give unbiased consideration to all manuscripts offered for publication, judging each on its merits without regard to race, religion, nationality, sex, seniority, or institutional affiliation of the author(s). An editor may, however, take into account relationships of a manuscript immediately under consideration to others previously or concurrently offered by the same author(s).
2. An editor should consider manuscripts submitted for publication with all reasonable speed.
3. The sole responsibility for acceptance or rejection of a manuscript rests with the editor. Responsible and prudent exercise of this duty normally requires that the editor seek advice from reviewers, chosen for their expertise and good judgment, as to the quality and reliability of manuscripts submitted for publication. However, manuscripts may be rejected without external review if considered by the editors to be inappropriate for the journal. Such rejections may be based on the failure of the manuscript to fit the scope of the journal, to be of current or sufficiently broad interest, to provide adequate depth of content, to be written in acceptable English, or other reasons.
4. The editor and members of the editor's staff should not disclose any information about a manuscript under consideration to anyone other than those from whom professional advice is sought. However, an editor who invites, or otherwise arranges beforehand, the submission of manuscripts may disclose to a prospective author the fact that a relevant manuscript by another author has been received. After a decision has been made about a manuscript, the editor and members of the editor's staff may disclose or publish manuscript titles and authors' names of works that have been accepted for publication, but no more information may be publicly shared unless explicit permission from the

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corresponding author has been obtained. If the editor handling the manuscript determines that it is unsuitable for publication in the journal for scientific reasons, they may then arrange to offer transfer to an alternate ACS journal for further consideration with respect to publication. To facilitate evaluation by the alternate journal, the editor and members of the editor's staff may disclose to the alternate ACS journal editor the titles, names of authors, text of the manuscript, supporting information, reviews of the originally submitted manuscript, and the identities of the reviewers.

5. An editor should respect the intellectual independence of authors.
6. Editorial responsibility and authority for any manuscript authored by an editor and submitted to the editor's journal should be delegated to some other qualified person, such as another editor of that journal or a member of its Editorial Advisory Board. Editors should also delegate manuscripts submitted by recent graduates (within at least the prior 5 years), by collaborators, or by colleagues at the same institution to some other qualified person, such as another editor of that journal or a member of its Editorial Advisory Board. Editorial consideration of such manuscripts in any way or form would constitute a conflict of interest, and is therefore improper.
7. Unpublished information, arguments, or interpretations disclosed in a submitted manuscript should not be used in an editor's own research except with the consent of the author. However, if such information indicates that some of the editor's own research is unlikely to be profitable, the editor could ethically discontinue the work. When a manuscript is so closely related to the current or past research of an editor as to create a conflict of interest, the editor should arrange for some other qualified person to take editorial responsibility for that manuscript. In some cases, it may be appropriate to tell an author about the editor's research and plans in that area.
8. If an editor is presented with convincing evidence that the main substance or conclusions of a report published in an editor's journal are erroneous, the editor should facilitate publication of an appropriate report pointing out the error and, if possible, correcting it. The report may be written by the person who discovered the error or by an original author.
9. An author may request that the editor not use certain reviewers in consideration of a manuscript. However, the editor may decide to use one or more of these reviewers, if the editor feels their opinions are important in the fair consideration of a manuscript. This might be the case, for example, when a manuscript seriously disagrees with the previous work of a potential reviewer.

B. Ethical Obligations of Authors

Authors are expected to adhere to the following ethical guidelines; infractions may result in the application of sanctions by the editor(s), including but not limited to the suspension or revocation of publishing privileges.

1. An author's central obligation is to present an accurate and complete account of the research performed, absolutely avoiding deception, including the data collected or used, as well as an objective discussion of the significance of the research. Data are defined as information collected or used in generating research conclusions. The research report and the data collected should contain sufficient detail and reference to public sources of information to permit a trained professional to reproduce the experimental observations.
2. An author should recognize that journal space is a precious resource created at considerable cost. An author therefore has an obligation to use it wisely and economically.
3. When requested, the authors should make every reasonable effort to provide data, methods, and samples of unusual materials unavailable elsewhere, such as clones, microorganism strains, antibodies, etc., to other researchers, with appropriate material transfer agreements to restrict the field of use of the materials so as to protect the legitimate interests of the authors. Authors are encouraged to submit their data to a public database, where available.

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4. An author should cite those publications that have been influential in determining the nature of the reported work and that will guide the reader quickly to the earlier work that is essential for understanding the present investigation. Except in a review, citation of work that will not be referred to in the reported research should be minimized. An author is obligated to perform a literature search to find, and then cite, the original publications that describe closely related work. For critical materials used in the work, proper citation to sources should also be made when these were supplied by a nonauthor.

5. Any unusual hazards inherent in the chemicals, equipment, or procedures used in an investigation should be clearly identified in a manuscript reporting the work. Authors should inform the editor if a manuscript could be considered to report research that, based on current understanding, can be reasonably expected to provide knowledge, products, or technologies that could be directly misapplied by others to pose a threat to public health and safety, agricultural crops and other plants, animals, the environment, or materiel.

6. Fragmentation of research reports should be avoided. A scientist who has done extensive work on a system or group of related systems should organize publication so that each report gives a well-rounded account of a particular aspect of the general study. Fragmentation consumes journal space excessively and unduly complicates literature searches. The convenience of readers is served if reports on related studies are published in the same journal, or in a small number of journals.

7. In submitting a manuscript for publication, an author should inform the editor of related manuscripts that the author has under editorial consideration or in press. Copies of those manuscripts should be supplied to the editor, and the relationships of such manuscripts to the one submitted should be indicated.

8. It is improper for an author to submit manuscripts describing essentially the same research to more than one journal of primary publication, unless it is a resubmission of a manuscript rejected for or withdrawn from publication. It is generally permissible to submit a manuscript for a full paper expanding on a previously published brief preliminary account (a “communication” or “letter”) of the same work. However, at the time of submission, the editor should be made aware of the earlier communication, and the preliminary communication should be cited in the manuscript.

9. An author should identify the source of all information quoted or offered, except that which is common knowledge. Information obtained privately, as in conversation, correspondence, or discussion with third parties, should not be used or reported in the author’s work without explicit permission from the investigator with whom the information originated. Information obtained in the course of confidential services, such as refereeing manuscripts or grant applications, should be treated similarly.

10. An experimental or theoretical study may sometimes justify criticism, even severe criticism, of the work of another scientist. When appropriate, such criticism may be offered in published papers. However, in no case is personal criticism considered to be appropriate.

11. The co-authors of a paper should be all those persons who have made significant scientific contributions to the work reported and who share responsibility and accountability for the results. Authors should appropriately recognize the contributions of technical staff and data professionals. Other contributions should be indicated in a footnote or an “Acknowledgments” section. An administrative relationship to the investigation does not of itself qualify a person for co-authorship (but occasionally it may be appropriate to acknowledge major administrative assistance). Deceased persons who meet the criterion for inclusion as co-authors should be so included, with a footnote reporting date of death. No fictitious name should be listed as an author or coauthor. The author who submits a manuscript for publication accepts the responsibility of having included as co-authors all persons appropriate and none inappropriate. The submitting author should have sent each living co-author a draft copy of the manuscript and have obtained the co-author’s assent to co-authorship of it.

12. The corresponding author must disclose to the editor and readers of the journal any relevant actual or potential conflicts of interest of any of the authors that might be associated with publication of the results contained in the authors’ manuscript at the time of submission. All authors must declare (1)

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sources of funding for the research reported; (2) the existence of any significant financial interest (>$5,000 or >5% equity interest) in corporate or commercial entities that have a financial or other interest in the results of the manuscript; (3) any employment or other relationship (within the past three years) with entities that have a financial or other interest in the results of the manuscript (including but not limited to paid consulting, expert testimony, honoraria, patent interests, or membership of advisory boards or committees of the entity). Financial interests will be included in the published article. Authors must also disclose to the editor any non-financial potential or perceived conflicts of interest that, in their view, may affect the peer review or publication process.

13. Plagiarism is not acceptable in ACS journals. ACS journals adhere to the U.S. National Science Foundation definition of plagiarism as "the appropriation of another person's ideas, processes, results, or words without giving appropriate credit" (45 Code of Federal Regulations, Section 689.1). Authors should not engage in plagiarism - verbatim or near-verbatim copying, or very close paraphrasing, of text or results from another's work. Authors should not engage in self-plagiarism (also known as duplicate publication) - unacceptably close replication of the author's own previously published text or results without acknowledgement of the source. ACS applies a "reasonable person" standard when deciding whether a submission constitutes self-plagiarism/duplicate publication. If one or two identical sentences previously published by an author appear in a subsequent work by the same author, this is unlikely to be regarded as duplicate publication. Material quoted verbatim from the author's previously published work must be placed in quotation marks. In contrast, it is unacceptable for an author to include significant verbatim or near-verbatim portions of his/her own work, or to depict his/her previously published results or methodology as new, without acknowledging the source. (Modeled with permission from Society for Industrial and Applied Mathematics: Authorial Integrity in Scientific Publication http://www.siam.org/books/plagiarism.php.)
14. The American Chemical Society Publications rules and ethical guidelines provide mandatory standards of practice in experimental studies performed using biological samples obtained from animals or human subjects. Studies submitted for publication approval must present evidence that the described experimental activities have undergone local institutional review assessing safety and humane usage of study subject animals. In the case of human subjects authors must also provide a statement that study samples were obtained through the informed consent of the donors, or in lieu of that evidence, by the authority of the institutional board that licensed the use of such material. Authors are requested to declare the identification or case number of institution approval as well as the name of the licensing committee in a statement placed in the section describing the studies' Material and Methods.
15. Images should be free from misleading manipulation. When images are included in an account of research performed or in the data collection as part of the research, an accurate description of how the images were generated and produced should be provided.

C. Ethical Obligations of Reviewers of Manuscripts

1. Inasmuch as the reviewing of manuscripts is an essential step in the publication process, and therefore in the operation of the scientific method, every scientist has an obligation to do a fair share of reviewing.
2. A chosen reviewer who feels inadequately qualified to judge the research reported in a manuscript should return it promptly to the editor.
3. A reviewer (or referee) of a manuscript should judge objectively the quality of the complete manuscript and the Supporting Information, including the experimental and theoretical data, the interpretations and exposition, with due regard to the maintenance of high scientific and literary standards. A reviewer should respect the intellectual independence of the authors.
4. A reviewer should be sensitive to the appearance of a conflict of interest when the manuscript under review is closely related to the reviewer's work in progress or published. If in doubt, the reviewer should

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return the manuscript promptly without review, advising the editor of the conflict of interest or bias. Alternatively, the reviewer may wish to furnish a signed review stating the reviewer's interest in the work, with the understanding that it may, at the editor's discretion, be transmitted to the author.

5. A reviewer should not evaluate a manuscript authored or co-authored by a person with whom the reviewer has a personal or professional connection if the relationship would bias judgment of the manuscript.

6. Confidentiality and peer reviewer anonymity are expectations throughout the editorial review process to allow for candid discussion and evaluation regarding submitted scientific content. More specifically:
    a. A reviewer should treat both the manuscript and data received from the journal, their review report, and related correspondence, as confidential. Such documents and their contents should neither be disclosed to nor discussed with any individual or organization.
    b. For educational purposes, the reviewer may wish to enlist the assistance of a trainee currently under their direction (for example a Ph.D. student or postdoctoral researcher advised by the reviewer) in reviewing the manuscript. This practice is allowed under the stipulations that the assigned reviewer (i) clearly communicate the need for confidentiality to the trainee [see a.] (ii) must read and approve the review report prior to submission, and (iii) must disclose to the editor the name of the trainee that provided the assistance.
    c. In some special cases, the assigned reviewer may desire some level of input, advice, or guidance from a specific expert to facilitate review of the manuscript. In such instances, the reviewer must seek approval from the editor prior to sharing the contents of the manuscript with the expert. Following editorial approval, the assigned reviewer must clearly communicate the need for confidentiality to the consulted expert. The identity of the expert must also be disclosed to the editor at that time.
    d. Reviewers may disclose publicly that they have served as an invited reviewer for a named ACS journal. However, the reviewer should not identify themselves as the reviewer of a specific manuscript. In addition, the reviewer may not disclose the contents of the review report to any individual or organization. In some special cases, the reviewer may desire to disclose their identity to the manuscript authors for scientific reasons. Under such circumstances, the reviewer must seek prior approval from the editor, and the decision to disclose such information to the authors is at the sole discretion of the editor. This expectation of peer review confidentiality and anonymity is independent of, and extends beyond, the final decision on the manuscript (i.e., whether or not the manuscript was published or rejected).

7. Reviewers should explain and support their judgments adequately so that editors and authors may understand the basis of their comments. Any statement that an observation, derivation, or argument had been previously reported should be accompanied by the relevant citation. Unsupported assertions by reviewers (or by authors in rebuttal) are of little value and should be avoided.

8. A reviewer should be alert to failure of authors to cite relevant work by other scientists, bearing in mind that complaints that the reviewer's own research was insufficiently cited may seem self-serving. A reviewer should call to the editor's attention any substantial similarity between the manuscript under consideration and any published paper or any manuscript submitted concurrently to another journal.

9. A reviewer should act promptly, submitting a report in a timely manner. Should a reviewer receive a manuscript at a time when circumstances preclude prompt attention to it, the unreviewed manuscript should be returned immediately to the editor. Alternatively, the reviewer might notify the editor of probable delays and propose a revised review date.

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10. Reviewers should not use or disclose unpublished information, arguments, or interpretations contained in a manuscript under consideration, except with the consent of the author. If this information indicates that some of the reviewer's work is unlikely to be profitable, the reviewer, however, could ethically discontinue the work. In some cases, it may be appropriate for the reviewer to write the author, with copy to the editor, about the reviewer's research and plans in that area.
11. The review of a submitted manuscript may sometimes justify criticism, even severe criticism, from a reviewer. When appropriate, such criticism may be offered in published papers. However, in no case is personal criticism of the author considered to be appropriate.
12. Reviewers should notify editors of concerns with respect to manuscripts that report research that, based on current understanding, can be reasonably expected to provide knowledge, products, or technologies that could be directly misapplied by others to pose a threat to public health and safety, agricultural crops and other plants, animals, the environment, or materiel.

D. Ethical Obligations of Scientists Publishing outside the Scientific Literature

1. A scientist publishing in the popular literature has the same basic obligation to be accurate in reporting observations and unbiased in interpreting them as when publishing in a scientific journal.
2. Inasmuch as laymen may not understand scientific terminology, the scientist may find it necessary to use common words of lesser precision to increase public comprehension. In view of the importance of scientists' communicating with the general public, some loss of accuracy in that sense can be condoned. The scientist should, however, strive to keep public writing, remarks, and interviews as accurate as possible consistent with effective communication.
3. A scientist should not proclaim a discovery to the public unless the experimental, statistical, or theoretical support for it is of strength sufficient to warrant publication in the scientific literature. An account of the experimental work and results that support a public pronouncement should be submitted as quickly as possible for publication in a scientific journal. Scientists should, however, be aware that disclosure of research results in the public press or in an electronic database or bulletin board might be considered by a journal editor as equivalent to a preliminary communication in the scientific literature.

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