Instructions to Authors for *Analytical Chemistry*

A-PAGE ARTICLE GUIDELINES

Analytical Chemistry publishes Instrumentation, Report, Analytical Approach, A/C Interface, and Education feature articles in the A-page section. In contrast to research articles written for the specialist, A-page articles are written for the generalist. Because they are intended to interest a large number of readers, we encourage authors to provide a popularized and educational perspective. These articles should not be definitive, comprehensive reviews. Commercial overtones should be minimized. Our recommendation is that you write your presentation at a level that could be understood by a student in an advanced undergraduate or firstyear graduate-level analytical chemistry course. We encourage you to structure your feature as if it were a good lecture. Thus, your article should provide a "first-principles" introduction to the technique or application, followed by a clear transition to the key topic with illustrative examples. Any mathematical equations included should be of general interest. Although A-page articles are frequently invited, unsolicited articles will be considered. Authors should send or e-mail an outline of the proposed article to the Washington, DC, office. All articles submitted for publication are subject to editorial and peer review. Suggestions for appropriate reviewers are encouraged. For tips on writing an A-page article, visit our home page at http://pubs.acs.org/ac.

INSTRUMENTATION

Instrumentation articles focus on some aspect of a measurement system relevant to analytical science. Areas of interest include instrument design and applications in fields such as separations science, MS, lasers, surface analysis, materials, spectroscopy, electroanalytical chemistry, bioanalytical chemistry, and biotechnology. Advances in sensitivity, selectivity, and speed should be emphasized. Presentations should provide sufficient information to allow readers to assess both the advantages and the disadvantages of new versus currently available instruments, and to determine how the information provided compares with and/or complements that obtained from other techniques and instruments.

REPORT

Reports are intended to broaden readers' professional interests and keep them aware of the role of analytical chemistry in the scientific arena and in society in general. Suitable subject matter includes, but is not limited to, state-of-the-art coverage of important, broad techniques; historical views of the field; tutorial presentations of newly developing technical areas; applications of techniques to areas of interest, such as environmental chemistry and biomedicine; and philosophical presentations dealing with any facet of analytical practice.

ANALYTICAL APPROACH

Analytical Approach focuses on analytical problem solving that is of concern to laboratories analyzing real-world samples. Additional topics are inspired by samples of interest to the general public, including archaeological materials, art objects, or forensic specimens. Articles should include a description of the problem and related background material that gives perspective on its economic or societal significance. The author should then describe the reasoning behind the particular analytical approach taken to solve the problem.

A/C INTERFACE

A/C Interface articles focus on the influence of computers and automation on the practice of analytical chemistry. Suitable subject matter includes but is not limited to hardware and software for analytical chemistry, laboratory automation and robotics, data acquisition and analysis, chemometrics, and chemical information systems and databases.

EDUCATION

Education articles foster discussion and present new or evolving approaches for analytical chemistry-related education in the classroom and the laboratory. These articles include topics of relevance to academia and industry, such as continuing education. Articles can also discuss problems in current educational practices and structures and can present future challenges for consideration. Articles should be submitted as 3000-word features or 1200-word opinion pieces.

MANUSCRIPT FORMAT

Manuscript length varies with the type of presentation **but should not exceed 5000 words**. A maximum of five figures and/or tables can be included to complement or enhance the text. Camera-ready versions of the figures are usually needed for complex diagrams and spectra; otherwise, drafts of the figures are acceptable if they clearly indicate the information to be conveyed. The editors and artists will assist you in effective and attractive presentation of the material. If any figures have appeared previously or are adapted from other publications, please indicate this in the manuscript and your submission letter. Please do not include more than 30 references; follow the literature citation style used in the research section.

Send four copies of the manuscript, along with a copy on diskette, to Managing Editor, *Analytical Chemistry*, 1155 16th St., N.W., Washington, DC 20036 (202-872-4570; analytical@acs.org). Please indicate in your cover letter that the paper you are submitting is for consideration as an A-page feature article.

GUIDELINES FOR PERSPECTIVES ARTICLES

Perspectives articles are unlike others in the research section in that they are neither reports of original research nor are they reviews with the traditional objective of summarizing progress in a field. Instead, Perspectives point out the authors' vision of the character and importance of a new direction in analytical chemistry, analyze research reports that provide the foundation for the new direction, and discuss the

nature of the opportunities perceived. They can also be articles in which authors synthesize research results with ideas and needs for additional work, as indicated by the results.

Perspectives are aimed at specialists and experts in the field and the level of writing reflects their sophistication with the topic. They are not intended to be accounts or analysis of an individual's personal research. Perspectives will be published at the front of the mid-month editions of the journal, paginated as a part of the research section. The author's title will be preceded by Perspectives in *Analytical Chemistry*. Perspectives can be submitted without invitation; some will be invited. Because only a limited number of Perspectives will be published, the Editor encourages a preliminary contact by prospective authors. They are reviewed by experts in the field, following these Guidelines (authors are encouraged to suggest expert reviewers). Editorial decisions will be based on technical quality, significance, and demonstration of a new direction in analytical chemistry.

The manuscript must be balanced, fair, and accurate in treating contemporary literature. Perspectives are strictly limited to five journal pages (5000 words including text, tables, captions, references, and figures).

RESEARCH ARTICLE GUIDELINES

Research articles can be submitted to *Analytical Chemistry* as either traditional paper copies by mail (not fax) or electronically over the Web. See instructions for Web submission at http://pubs.acs.org/journals/ancham/index.html. The Editor recommends Web submission where possible.

SCOPE AND LENGTH

The journal is devoted to the dissemination of new and original knowledge in all branches of analytical chemistry. Fundamental articles may address the general principles of chemical measurement science and need not directly address existing or potential analytical methodology. Articles may be entirely theoretical with regard to analysis or may report experimental results that bear on theory. Articles may contribute to any of the phases of analytical operations, including sampling, chemical reactions, separations, instrumentation, measurements, and data processing. Articles dealing with known analytical methods should offer either a significant, original application of the method, or a significant improvement of the method, or of results for an important analyte.

The benchmark for the maximum length of published research articles is seven journal pages. Absent a convincing justification by the author, condensation of papers longer than this will normally be required by the Editor. For purposes of estimating manuscript length, authors should use 1000 words per journal page, with a figure panel (not including the caption) or table counting as 200 words.

In addition to regular research papers, Correspondence and Technical Notes are published. A Correspondence manuscript is a brief disclosure of new analytical concepts of unusual significance and will be considered on an accelerated schedule. Correspondence can also represent important comments on the work of others, in which case the authors of the work being discussed will ordinarily be allowed to reply. Correspondence manuscripts have a maximum length of three journal pages (3000 words). Technical Notes (3–4 journal pages) should be brief descriptions of novel apparatus or techniques, requiring real ingenuity on the author's part, that offer definite advantages over those already available. Guided by the review, the editors will select a limited number of research articles to be published as Accelerated Articles.

Papers involving extensive use of computers and data processing (e.g., chemometrics) will be judged by the usual criteria of originality, technical content, and value to the field. Detailed mathematical derivations, computation procedures, and programs should be presented in Supporting Information. The use of simulated analytical data to evaluate data processing methods is discouraged.

SUBMISSION OF MANUSCRIPTS

Papers submitted to *Analytical Chemistry* are considered with the understanding that they have not been published and are not under consideration elsewhere. Electronic submission is recommended by the Editor.

To submit manuscripts electronically, see the instructions at http://pubs.acs.org/journals/ancham/index.html. Choose option 1, if you can. Submit material as separate files: manuscript (as a single file, with figures at the end and in order); cover letter (with suggested reviewers); Supporting Information section, if present; and preprint, if needed (submit as Supporting Information and indicate "not for publication"). Supporting Information can also be submitted separately as hard copy (see the Web instructions).

For submission of manuscripts as hard copy, send four complete double-spaced paper copies of the manuscript (and of the Supporting Information section, if present), with text, tables, and illustrations of a size that can be mailed to reviewers under one cover. Please print on one side only.

Send all copies of the manuscript with cover letter to Royce W. Murray, Editor, *Analytical Chemistry*, Dept. of Chemistry, Venable and Kenan Laboratories, University of North Carolina, Chapel Hill, NC 27599-3290 (919-962-2541; fax 919-962-2542). Please include e-mail addresses and fax numbers in your cover letter.

Authors are encouraged to suggest reviewers for their work; such reviewers may be used at the discretion of the editors. In addition, include any of your papers that are in press or submitted to other journals that would be helpful to reviewers in evaluating the submitted work, as well as a copy of written permission from anyone who is not an author but whose work is cited as a personal communication, unpublished work, or work in press.

Documents accepted for publication in ACS journals will be posted in the World Wide Web edition of the journal as soon as they are ready for publication (Articles ASAP), that is, when galley proofs are corrected and all the author queries are resolved. This stage can take place any time from 2 to 11 weeks in advance of the printed issue's cover date. Authors should take this time frame into account when planning their intellectual and patent activities related to their document. The actual date on which the document is posted on the Web is recorded on a separate line at the bottom of the first page of the document in the printed issue.

TITLE

Use specific and informative titles with a high keyword content. Avoid acronyms and subtitles.

AUTHORSHIP

Give authors' full names, complete mailing address of the place where the work was done, and the current address of each author, if different, as a footnote. Indicate the corresponding author by an asterisk and provide e-mail addresses and fax numbers.

ABSTRACT

Abstracts are required for all manuscripts (80–200 words) and should describe briefly and clearly the purpose of the research, the principal results, and the major conclusions. Remember that the abstract will be the most widely read portion of the paper and will be used by abstracting services.

TEXT

Consult the publication for general style of writing. Write for the specialist. It is not necessary to include information and details or techniques that should be common knowledge to specialists in the field.

General organization. Indicate the breakdown among and within sections with center heads and side heads. Results and Discussion follow the Experimental Section. Keep all information pertinent to a particular section and avoid repetition.

Introduction. The introduction should state the purpose of the investigation and must include appropriate citations of relevant, precedent work but should not include an extensive review of marginally related literature. If the manuscript describes a new method, reasons must be given to indicate why it is preferable to older methods. If the manuscript describes an improved analysis of a substance, the competing methods must be referenced and compared. Absence of appropriate literature references can be grounds for rejection of the paper.

Experimental section. Use complete sentences (i.e., do not use outline form). Be consistent in voice and tense.

Apparatus: List only devices of a specialized nature.

Reagents: List and describe preparation of special reagents only. Do not list reagents normally found in the laboratory and preparations described in standard handbooks and texts.

Procedure: Because procedures are intended as instructions to permit work to be repeated by others, give adequate details of critical steps. Published procedures should be cited but not described, except where the presentation involves substantial modifications. Very detailed procedures should be presented in a Supporting Information section.

Safety considerations: Describe all safety considerations, including any procedures that are hazardous, any reagents that are toxic, and any procedures requiring special precautions, in enough detail so that workers in the laboratory repeating the experiments can take appropriate safety measures. Procedures and references for the neutralization, deactivation, and ultimate disposal of unusual byproducts should be included.

Results and discussion. The results may be presented in tables or figures; however, many simple findings can be presented directly in the text with no need for tables or figures. The discussion should be concise and deal with the interpretation of the results. In most cases, combining results and discussion in a single section will give a clearer, more compact presentation.

Conclusions. Use the conclusion section only for interpretation and not to summarize information already presented in the text or abstract.

References. References to notes/comments and to the permanent literature should be numbered in one consecutive series by order of mention in the text. The complete list of literature citations should be placed on a separate page, double-spaced, at the end of the manuscript. Reference numbers in the text should be superscripted. The accuracy and completeness of the references are the author's responsibility.

Use *Chemical Abstracts Service Source Index* abbreviations for journal names and include publication year, volume, and page number (inclusive pagination is recommended). Include *Chemical Abstracts* reference for foreign publications that are not readily available.

List submitted articles as "in press" *only* if formally accepted for publication, and give the volume number and year if known. Otherwise use "submitted to" or "unpublished work" with the name of the place where the work was done and the date. Include name, affiliation, and date for "personal communications".

These are examples of the reference format:

(1) Koile, R. C.; Johnson, D. C. *Anal. Chem.* **1979,** *51,* 741–744.

(2) Willard, H. H.; Merritt, L. L., Jr.; Dean, J. A.; Settle, F. A., Jr. Instrumental Methods of Analysis, 6th ed.; Van Nostrand: New York, 1981; Chapter 2.

Acknowledgment. Authors may acknowledge technical assistance, gifts, the source of special materials, credit for financial support, meeting presentation information, and the auspices under which work was done, including permission to publish.

FIGURES AND TABLES

Do not use figures or tables that duplicate each other or material already in the text. Calibration plots will not normally be published; give the information in a table or in the text. Do not include tables or figures that have already been published. If the use of a large number of figures is desired to illustrate a phenomenon, the figures can be published as Supporting Information.

Tables. Prepare tables in a consistent form, furnish each with an appropriate title, and number consecutively in the order of reference in the text. Type each table on a separate page, and collate at the end of the manuscript.

Figures. The final quality of the illustrations in your paper is determined by the quality of your electronic files or paper originals. The paper artwork or photographs you send with your paper are digitized during journal production.

Diagrams, graphs, charts, and other artwork should be printed on a high-resolution laser printer with dark black ink on high-quality white, smooth, opaque paper. Avoid thin, transparent, or textured papers such as vellum or tracing paper. Submit original artwork or a photographic print of the original; photocopies do not reproduce well. In general, bar graphs are wasteful of space and are discouraged.

When preparing artwork or graphs, remember that they must fit either a one-column (8.25 cm) or two-column (17.78 cm) format. The maximum height is 24 cm. For best results, submit illustrations in the actual size at which they

should appear. If you must submit artwork that must be reduced, choose a lettering size large enough to be legible after the figure is reduced. Avoid using complex textures and shading; these do not reproduce well. To show a pattern, use a simple crosshatch design.

Photographs should be full-size, high-contrast prints with a smooth or glossy finish. If possible, please send photographs that are single- or double-column width to avoid reduction for printing. Avoid negatives, slides, and vugraphs. Photographs produced on a laser printer and prints cut from a printed publication do not normally give good results when printed. Do not write on the front or back of the image area of the photograph; these marks may show through when the photograph is printed.

Color reproduction, if approved by the editor, will be provided at no cost to the author. Color illustrations should only be submitted if essential for clear communication. A surcharge for color will be added to the standard cost of reprints.

Figure captions. Include, on one page, a double-spaced list of all captions and legends for illustrations. Make the legend a part of the caption instead of inserting it within the figure.

SUPPORTING INFORMATION

In the interest of saving journal page space and seeking shorter, more concise articles, *Analytical Chemistry* requires authors of research papers to publish certain types of material from their research as Supporting Information. These types of materials include extensive tabular data (i.e., databases in comparative or theoretical studies or detailed kinetic data), extensive figures connected with computational modeling, analytical and spectral characterization data for new compounds, and extensive instrument and circuit diagrams.

Supporting Information is subject to peer review along with the associated manuscript.

Material to be published as Supporting Information should be clipped together separately from the associated manuscript with a header page giving the authors' names and affiliations, as well as the associated manuscript title, and the material should be in a form suitable for immediate reproduction. Color figures can be published as Supporting Information at no cost to the author. Captions to figures and tables should appear on the same page as the figure or table. Preferable page size is 22 x 28 cm with material aligned parallel to the 22-cm dimension. Figures should be original ink drawings or matte black-and-white prints. Text typed or printed should be of the same easily readable quality as that in the associated manuscript.

A statement of the availability of Supporting Information should be placed at the end of the paper using the format "Supplementary Material Available: A listing (describe concisely what is in the material and state the number of pages) is available as Supporting Information. Current ordering information is found on any masthead page."

Supporting Information is also available free by visiting the *Analytical Chemistry* home page at http://pubs.acs.org/ac. Detailed instructions for using this service, along with a description of file formats, are available at this site. For additional information on electronic access, send e-mail to journalhelp@acs.org. Supporting Information prior to 1995 is available for a fee from Publication Support Services. Tel: 202-872-4376; fax: 202-872-6325; e-mail: pss@acs.org.

NOMENCLATURE

Nomenclature should conform with current American usage. Insofar as possible, authors should use systematic names similar to those used by the International Union of Pure and Applied Chemistry and the Chemical Abstracts Service. *Chemical Abstracts* (CA) nomenclature rules are described in Appendix IV of the *Chemical Abstracts Index Guide*. For CA nomenclature advice, consult the Manager of Nomenclature Services, Chemical Abstracts Service, P.O. Box 3012, Columbus, OH 43210-0012. A name generation service is available for a fee through CAS Client Services, 2540 Olentangy River Road, P.O. Box 3343, Columbus, OH 43210-0334; (614) 447-3870; fax: (614) 447-3747; or e-mail: answers@cas.org.

Avoid trivial names. Well-known symbols and formulas may be used if no ambiguity is likely. Define trade names and abbreviations at point of first use.

Use SI units of measurement (with acceptable exceptions) and give dimensions for all terms. If nomenclature is specialized, as in mathematical and engineering reports, include a Nomenclature section at the end of the paper, giving definitions and dimensions for all terms. Type all equations and formulas clearly and number all equations in consecutive order.

General information about ACS publications is given in *The ACS Style Guide* (1997), available from Oxford University Press, Order Department, 201 Evans Road, Cary, NC 27513.

Updated instructions are available to authors by visiting the *Analytical Chemistry* home page at http://pubs.acs.org/ac.

ETHICAL GUIDELINES TO PUBLICATION OF RESEARCH

The guidelines embodied in this document were revised by the Editors of the Publication Division of the American Chemical Society in January 2000.

PREFACE

The American Chemical Society serves the chemistry profession and society at large in many ways, among them by publishing journals that 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 standard 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 foregoing 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.

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, gender, 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 review if considered inappropriate for the journal.

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 solicits, or otherwise arranges beforehand, the submission of manuscripts may need to disclose to a prospective author the fact that a relevant manuscript by another author has been received or is in preparation). 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 papers that have been accepted for publication, but no more than that unless the author's permission has been obtained.

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. Editorial consideration of the manuscript in any way or form by the author/editor 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 continue 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.

ETHICAL OBLIGATIONS OF AUTHORS

1. An author's central obligation is to present an accurate account of the research performed as well as an objective discussion of its significance.

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. A primary research report should contain sufficient detail and reference to public sources of information to permit the author's peers to repeat the work. When requested, the authors should make a reasonable effort to provide 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.

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.

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 these 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. 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 co-author. 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 coauthor a draft copy of the manuscript and have obtained the coauthor's assent to co-authorship of it.

12. The authors should reveal to the editor any potential conflict of interest, e.g., a financial interest in a company, that might be affected by publication of the results contained in a manuscript. The authors should ensure that no contractual relations or proprietary considerations exist that would affect the publication of information in a submitted manuscript.

ETHICAL OBLIGATIONS OF REVIEWERS

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 manuscript, of its experimental and theoretical work, of its interpretations and its 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 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 sent 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. A reviewer should treat a manuscript sent for review as a confidential document. It should neither be shown to nor discussed with others except, in special cases, to persons from whom specific advice may be sought; in that event, the identities of those consulted should be disclosed to the editor.

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.

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, however, the reviewer 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.

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.

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 extensive disclosure of research in the public press might be considered by a journal editor as equivalent to a preliminary communication in the scientific literature.

These instructions and the copyright status form are printed in the first issue of each volume. Please conform to these instructions when submitting manuscripts. These instructions are available via the World Wide Web by first selecting “journals and magazines”, then selecting the journal title, and finally selecting “info for authors” at URL http://pubs.acs.org.