

*The Annals of Applied Statistics*: Guidelines  
for Editor-in-Chief from Karen Kafadar (EiC, 2019-2021)

*The Annals of Applied Statistics* was founded in 2007 by Bradley Efron (Editor-in-Chief, 2007-2012) and is published by the Institute of Mathematical Statistics. Its mission was conceived by its founding Editor-in-Chief and has been supported by his successors: *AOAS* focuses on sound statistical research and methodology that was motivated by, and that lead to important insights in, a real data application in the computational, physical, biological, and social sciences. See this web page for information about the journal:

<https://imstat.org/journals-and-publications/annals-of-applied-statistics/>

A requirement for all manuscripts that are published in *any* journal is *consistency with the mission*. About 20-25% of the submissions are rejected on this basis alone.

### Statement of Purpose

*“We hope to publish papers that have substantive applied origins and involve relevant datasets, while also being of interest beyond the specific application. Papers that include innovative methodology brought to bear on scientific/policy questions and relevant data are especially welcome. Typically, a paper will be framed around one or more unresolved applied problems, where data are introduced to help address them. Data analyses should go well beyond numerical illustrations of calculations of proposed new methodology, with particular emphasis put on comparative analyses and substantive findings. Submissions without methodological innovation will be considered if the topic is of exceptionally broad interest, the application is groundbreaking, and the statistical methods used are state of the art.”*

See also “Guidelines for Referees” for criteria that are used for manuscript evaluation:

“AOAS is intended to be read by all professional statisticians, as well as by other scientists who are interested in particular areas of statistical application. It is important for the abstract and introduction to say What scientific/policy question(s) the paper addresses, Why the topic is of interest, and How the data analyses will address these questions, in as non-technical a manner as possible.”

The four questions that referees are asked to consider are:

1. Does the paper genuinely concern applied statistics?
2. Is the paper clearly written?
3. Is the paper correct?
4. Is the paper interesting?

The key ingredients of *AOAS* that distinguish it from the other statistical journals are:

- *Appropriate* (and, ideally, *novel*) statistical methodology built around a real problem;
- Methodology of interest to both *statisticians* and *statistically sophisticated scientists*; i.e., people who will actually find value in the research for a problem that they might face in their own work;
- Real problems that demonstrate the need for the research that is described (mathematical theory and derivations presented for their own sake will be of limited interest to our audience, but can be placed in a “Supplementary File”);
- Technically sound methodology with adequate demonstration and confirmation of its performance.

Many of these criteria apply also to *Technometrics*, although the focus of that journal is limited to methodology for the physical, engineering, and chemical sciences. Some manuscripts meet virtually all of these criteria but are rejected, not because the content is inappropriate or technically incorrect, but because they are deemed insufficiently novel to justify publication in *AOAS*. In such cases, we advise authors to simply resubmit their manuscripts, virtually unchanged, to more specialized journals.

The Publishing Services Manager for *AOAS* is Geri Mattson, [mattsonpublishingservices@comcast.net](mailto:mattsonpublishingservices@comcast.net). Geri is also “super-user” for EJMS (*AOAS*’s electronic journal manuscript system) so she can upload manuscripts, supplementary files, reviews, etc., when needed. She also can often assist users who have problems with EJMS.

The typical *AOAS* article rarely exceeds 20 pages, although many refer to Supplementary Files containing derivations, further performance results, algorithms, etc. Each issue of *AOAS* is roughly 525 pages (~20-25 papers). Color adds significantly to printing costs; authors are strongly encouraged to avoid it (by using different line types, point characters, or grayscale shadings) unless absolutely essential for reader comprehension. Figures can be supplied in color and will appear in color in the online publication, but a grayscale version will be created for print. Other than color, *the figures and text must be the same for both versions*.

#### **Duties of Editor-in-Chief (EiC)** (each explained in more detail below)

1. Review: Review submitted manuscripts; assign to an Editor or withdraw
2. Communications: Handle inquiries from authors, IMS, reviewers
3. Lineup of issue: Select and order fully copy-edited manuscripts for quarterly issue
4. *Annual Report*: Prepare annual report for IMS Council Meeting (July)
5. Serve on IMS Council (*ex-officio*)
6. JSM: Organize (or assign organizer) invited session for JSM (“*Best of AOAS*”)

## 7. Editorial Board: Review AEs and consider potential AEs

### 1. Review: Review submitted manuscripts; assign to an Editor or withdraw

You will receive an email message when a new MS has been submitted. Clicking on it, you have three choices:

- Assign it to an Area Editor. In many cases, the assignment is clear from the subject (biology, health/medicine, social science, physical science, computing/networks), but occasionally more than one Editor could handle it (e.g., causal inference, brain imaging). You can check the load of the different Editors under your EiC home page, “Assigned to Editors.”

You will receive an email message when the Area Editor accepts the assignment. (Occasionally the Editor must “decline” the assignment due to a COI or insufficient expertise.) An automated message will be sent to the author from the EiC, notifying the corresponding author of the assignment:

*Dear [author]:*

*Thank you for submitting “[MS title]” (manuscript ID AOAS2105-041) to Annals of Applied Statistics.*

*It has been assigned to Nicoleta Serban, who will be the Editor in charge of all further review decisions. Any further correspondence concerning the paper should be directed to nserban@isye.gatech.edu.*

*Feel free to write a covering note to Professor Nicoleta Serban, but that isn’t necessary to begin the review process.*

*With thanks for your interest in Annals of Applied Statistics,*

*Sincerely yours,*

*[EiC]*

**From that point forward, the EiC is no longer involved** (*unless*, and only if, the Editor asks the EiC for advice). Appeals from authors should be handled by the assigned Editor, *not* by the EiC.

- Assign the MS to yourself. You might wish to handle the review process yourself, if the MS falls within your expertise. *Note on review:* It is important to read reports from reviewers (AE and referees) *to be sure the report does not include the reviewer’s recommendation.* This guideline is stated explicitly under the *AOAS Guidelines for Referees*: “It is important that you communicate clearly to the Associate Editor your recommendation, but **please do not place that recommendation in your report to the authors.**” If the report includes it, you may have to ask the reviewer for another report that removes it. Not infrequently, your decision may contradict that of the reviewer, and the discrepancy will surely invite authors’ appeal of the decision. You also need to check “Author” under “Properties” of .docx files, which defaults to the referee’s name!
- Withdraw the manuscript from the submission queue. The two most common reasons for “withdraw” are (i) all theory or methodology; data (if any at all) appear only to illustrate the calculations; they do not meet this aspect of the mission: “*Data analyses should go well beyond numerical illustrations of calculations of proposed new methodology, with particular emphasis put on comparative*

*analyses and substantive findings.*” (ii) data application only, using conventional or well-known statistical methods (regression, neural networks, fitting time series models, etc.); they do not meet the *AOAS* mission for “*innovative methodology*” nor do they discuss a “*topic of exceptionally broad interest, the application is groundbreaking, and the statistical methods used are state of the art.*” When you click “Withdraw” EJMS will provide a “form letter” as a “default” which is appropriate for submissions that are theory or methodology; i.e., suitable for withdrawals of type (i) but not type (ii). [KK: I rarely used the “default” letter verbatim; rather I used it as a basis to customize my own letter specific to each author and MS.]

2. Communications: Handle inquiries from authors, IMS, reviewers

The most common communications will come from authors who inquire about the status of a manuscript. The timeliness of reviews greatly reduces the frequency of such inquiries. Reviewers may also contact the EiC for clarification of mission. Finally, all IMS journal Editors are invited to serve on the IMS Council *ex-officio* (by right of office); you are invited to participate in discussions on Council motions and in voting.

3. Lineup of issue: Select and order fully copy-edited manuscripts for quarterly issue

About 4-6 weeks before March 1, June 1, September 1, December 1, Geri Mattson ([mattsonpublishingservices](mailto:mattsonpublishingservices)) will send you a list of fully copy-edited manuscripts that are eligible for inclusion in the next issue, usually ordered by the date they were accepted. She also will inform you of the approximate number of pages allowed for the issue. IMS Council approves the journal budgets each year and hence sets the allowable number of pages per year. Note: color is very expensive to print; authors are invited to pay page charges (which are very modest; those for ASA journals are twice those of *AOAS*), but authors rarely do. Authors should be encouraged to avoid color unless essential for reader comprehension. Color is fine in Supplementary Files.

4. *Annual Report*: Prepare annual report for IMS Council Meeting (July)

The Annual Report includes primarily number of submissions, distributions of response times, etc. Elyse Gustafson ([erg@imstat.org](mailto:erg@imstat.org)) will notify you when it is due. Geri can provide reports from EJMS that may be helpful.

5. Serve on IMS Council (*ex-officio*) As noted above, all IMS journal Editors are invited to serve on the IMS Council *ex-officio* (by right of office); you are invited to participate in discussions on Council motions and in voting.

6. JSM: Organize (or assign organizer) invited session for JSM (“*Best of AOAS*”)

The JSM Program Committee includes one member who serves as IMS Program Chair. Elyse will remind you to submit a proposal for an invited session to the IMS Program Chair by the Due Date (usually September 1). The annual IMS meeting is held at JSM in odd-numbered years. Note: You may also want to nominate an *AOAS* article for ASA’s *Outstanding Statistical Applications Award*, usually due March 1; the journal where the winning article is published receives positive attention. See: <https://ww2.amstat.org/committees/commdetails.cfm?txtComm=CCNAWD02> for information about deadlines, past winners, etc.

## 7. Editorial Board: Review AEs and consider potential AEs

Generally, good referees make good AEs (and good AEs make good Editors). When asked to consider a candidate as a potential AE for *AOAS*, it is helpful to see if the person has ever reviewed any *AOAS* manuscripts, as well as the quality (constructive? brief? unnecessarily critical?) and timeliness of the review. *AOAS* has a special mission, so AEs should be familiar with the journal.

*The following information was presented to New Researchers Conferences.*

### *Review process*

The review process for each manuscript is very thorough. All manuscripts are reviewed first by the Editor-in-Chief and are then read carefully by the Editor; those deemed consistent with the mission of the journal with a technically plausible approach to a real problem are read further by an Associate Editor. Manuscripts that appear to have serious technical merit and demonstrated value for applied problems are evaluated by Referees. Guidelines for submission can be found on the *AOAS* web site, <http://imstat.org/aoas/mansub.html>.

### *Maximizing the probabilities of acceptance*

- *Good, solid application*: The key feature of *AOAS* papers is that they are motivated by a good, solid application of real importance. A paper with extensive mathematical derivations for a theoretical problem is more appropriate for a journal other than *AOAS*. Occasionally, *AOAS* publishes papers that focus on methodology, *when that methodology is deemed highly influential and clearly has application in a wide range of problems*. (One example was the paper, “Random Lasso” (Sijian Wang, Bin Nan, Saharon Rosset, and Ji Zhu), *AOAS* 5(1):468-485, 2011.) Our audience consists of readers who need useful methodology for problems of practical importance.
- *“Can vs Should”*: *AOAS* submissions should demonstrate clearly that the proposed method not only *can* be used, but in fact *should* be used — i.e., that it has advantages over and above existing *credible* methods. To this end, realistic comparisons with existing methodologies are important.
- *Uncertainty*: Users of statistical methods are rarely satisfied with mere point estimates of target parameters. Some indication of the uncertainty in these estimates, via confidence, prediction, or tolerance intervals, as dictated by proper statistical analysis, should be provided as are appropriate for the application.
- *Illustration*: The opening page of the *AOAS* web site states clearly that “our goal is to provide a timely and unified forum for all areas of applied statistics.” About 20% of the manuscripts that we receive contain no real application or only an example that demonstrates the numerical computations in the technique. As stated on <http://imstat.org/aoas/mansub.html>, “We expect that examples analyzed go well beyond numerical illustrations of calculations of proposed new methodology.”

- *Statistical methodology*: Occasionally we receive a manuscript that is clearly more suitable for a journal in applied probability or theoretical statistics. Our focus is clearly *applied statistics*. The web site lists the articles from the most recent issues. (IMS members have free electronic access to all IMS journals.)
- *Style*: A paper that begins with “Let  $(\Omega, F, P)$  be a probability space, where  $F$  is a sigma-algebra of events...” is not destined to appear in *AOAS*, but rather should be directed to a journal that emphasizes statistical theory. Papers that are well written often receive a more favorable hearing, so it is worthwhile asking several colleagues, both experienced users of statistics as well as research statisticians, to read your manuscript before submitting it for publication.

*Some suggestions for submitting papers:*

1. *Verify the match between your work and the journal’s mission*: Read the journal’s “Statement of Purpose” very carefully. If your manuscript does not fall within its scope, do not bother submitting it to that journal.
2. *Write the paper for the journal*: Related to the previous point, it is wise to think about the target audience for your paper *before you write it*. Have a specific journal in mind as you write.
3. *Seek a colleague’s advice*: To quote a familiar phrase in industry, “Do it right the first time.” While some authors do eventually meet with success by “letting the review process write the papers for them,” such authors whose papers go through five revisions do not earn the respect of their colleagues. Write the best paper you can the first time around. Ask at least your mentor (thesis adviser or senior colleague) to read the manuscript before you submit it.
4. *Addressing the Editor’s decision letter*: Consider carefully the comments in the reviews on your manuscript and determine whether (a) the comments can be addressed and a revision along the lines suggested in the reports can be prepared; or (b) the manuscript is simply inappropriate for the journal and an alternate publication outlet should be sought. (Option (b) should not occur if you have followed point (1) above.)
5. *Revisions and point-by-point responses*: If you choose option (a), be sure to address each point carefully in your “Response to the Editor” (or to the Associate Editor or to the Referees). You need not submit *separate* files for each report; a single file that contains your responses to *all* the comments in the reports is sufficient. Comments that have not been taken into consideration are legitimate grounds for a second rejection, *unless* you can demonstrate convincingly why those comments are not relevant or appropriate. Reviewers who take the time to write constructive reports deserve your consideration. Conversely, sarcastic comments are inappropriate; it is the journal Editor’s responsibility to excise all such comments. Some Editors do not; in this case, I would advise you not to “fight fire with fire” — that will get you nowhere, with neither the Editor nor the reviewer.

6. *Prior communication with the Editor*: Initial feedback from the Editor (e.g., “Is this paper appropriate for *AOAS*?”) can be helpful. But keep in mind that the Editor is already reading nearly a paper a day, so be respectful of the Editor’s time. Occasionally you will need clarification on reviewers’ comments; please remember that the Editor may not remember the details of the correspondence on each manuscript, so prior correspondence should not be seen as an excuse not to provide “point-by-point” responses.

*An aside: Being a referee*: If you are asked to serve as a referee, accept the invitation if the manuscript interests you (e.g., related to your own research), *and then follow through by providing the kind of useful, constructive report that you, as an author, would appreciate*. Your efforts may well be rewarded, not only in stimulating your own research but also in helping you to write papers that will survive the review process. Moreover, Editors know that good referees make good Associate Editors, and serving on an Editorial Board can be a highly rewarding professional experience. Quoting from Mark Twain,

*“Always do right. This will gratify some and astonish the rest.”*

Please feel free to contact any of the Area Editors (Edo Airoldi, Beth-Ann Griffin, Jeffrey Morris, Thomas Brendan Murphy, Nicoletta Serban) or the Editor-in-Chief Karen Kafadar if you have any questions.