

*The Annals of Applied Statistics: Guidelines for
Associate Editors (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 (generally by the Editor-in-Chief or the Area Editor) 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 reviewers (referees or AEs) 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.

AOAS's Publishing Services Manager is Geri Mattson, 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 is about 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, *figures and text must be the same for both versions*.

Process:

1. EiC Review: Editor-in-Chief reviews submitted manuscripts; those deemed worthy of subsequent review are assigned to an Area Editor. *From this point forward, the Area Editor takes full charge of the MS review and decision.*
2. Area Editor assigns MS to an Associate Editor (AE).
3. AE can either:
 - Make a recommendation without further review;
 - Assign one or more referees.

The AE can also choose to decline the invitation if the AE believes that the content of the MS is too far afield from his/her expertise.

4. EJMS will send you a message when all invited referees have submitted their reports, indicating that the MS is ready for the AE’s decision: Reject (incurably fatal flaws); Reject with Resubmission (fatal flaws, but possibly correctable); Major revision (serious, but not fatal, shortcomings); Minor revision (items that must be addressed, but they are straightforward); Accept.
5. Indicate in the “Comments for the Editor” the basis for your recommendation, and upload any reports (from you or from referees who chose to send them directly to you versus via EJMS).
6. Upload recommendation. (Your recommendation will go to the Area Editor, and you will continue to have access to the MS file, in your “dashboard.”)

A few notes on being AE:

1. You may end up making an immediate decision, without referees, about 15-20% of the time — it is not unusual. Most often, that happens on subsequent rounds (e.g., “Accept” because all reviewers’ comments were nicely addressed), or right away (“Reject” or “Reject with Resubmit”).
2. “Ideal” number of reports: Often, two reports will suffice: (2 referees, or 1 referee + your report). Some AEs like to invite an extra referee, in case one does not come through. The main issue to keep in mind is that you want to make it as easy as possible for the Area Editor to write his/her decision letter. Feel free to draft a few sentences for it yourself, in your “AE Comments” which are seen only by the Editor (and EiC), not by authors or even by your referees. So you can write in them, “I’m inclined to give more weight to Referee 1 because ...”).
3. *Please check Referees’ reports to be sure that:*
 - the referee has **not** placed a recommendation in the report;
 - a report in .docx format *does not contain the referee’s name* (under File → Properties → Summary).

“Guidelines for Referees” states clearly, “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**. But some referees forget. A recommendation from the referee that contradicts your own to the Editor creates problems for the Editor, and frequently invites an appeal from the author (“but Referee 1 said that the paper should be accepted!”).

4. You need not write a report. But sometimes you know the area so well yourself that your comments for the authors will be very valuable.
5. Consistent with AOAS’ request for making data and code available, the AE may also want to cite this sentence from the AOAS website (under “Manuscript Submission”) if either is missing:

“We strongly encourage submission of data sets, computer algorithms and supporting material (see instructions below.) This can help the editors and referees in the review process. We will archive supporting material along with the electronic versions of accepted papers.”

This guideline both benefits the author(s) (their method is more likely to be used if users have code) and enables others to reproduce the results. AOAS appreciates a github address, but, because github algorithms can be (and often are) updated, published AOAS articles must include, as an additional Supplementary File, the actual code that was used, so readers can duplicate the analysis. (The text can include a sentence like “The methods used in this paper can be found in the supplement, and the most updated version of the software can be downloaded from [github.com/...](https://github.com/)”) Note that, in lieu of the actual data sets, authors can also provide contact information for data that require special licensing or permissions to access.

6. Timeliness of reviews is critical. But do not sacrifice quality of review for timeliness. If a referee needs more time, please use your judgment to decide if that referee will *ever* come through. (Late reports prompt a message from EJMS, but some email systems divert these EJMS-generated messages to their spam box. You may have to send a message to the Referee through your own email account to minimize the chances of the reminder going to spam.)
7. Finally, as an author yourself, you know how irritating reviewers can be when they send comments on your *revision* about issues that existed in the *original submission*. You feel like writing, “why didn’t you tell me that the first time?” So, if you are requesting a revision, imagine yourself as the author, and try to raise everything that you feel really needs to be fixed. If an issue arises on the revision that did not exist in the original submission, that, of course, is perfectly appropriate. (If you see a prior issue that really needs to be fixed, apologize in your report for having missed it the first time.)

Thank you for agreeing to serve as an AE for AOAS. The opportunity to help authors improve their papers can be very rewarding. Your role is essential for helping to maintain the quality and reputation of the journal, and we hope you enjoy the experience!

The following information about AOAS has been presented to New Researchers Conferences; it is repeated here for your information also.

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 (Ω, 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 authors still need 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 better papers yourself. Moreover, Editors know that good referees make good Associate Editors, and serving on an Editorial Board can be a highly rewarding professional experience. (Quoting Mark Twain, "*Always do right. This will gratify some and astonish the rest.*")

Feel free to contact any of the Area Editors or the Editor-in-Chief if you have questions.