

## EDITORIAL

### How to Be a More Effective Author

The issues of *Monthly Weather Review* would be mostly empty if it were not for the large number of high-quality submissions each year. To retain our position as one of the leading meteorological journals in the world, we need to attract and retain these valuable contributions. However, of the approximately 400 annual submissions, only 56.7% were eventually published in 2021. The percentage of papers being rejected has slowly increased from 33.7% in 2007 (Schultz 2010a) to 37.6% in 2021, with withdrawals and transfers making up the remaining few percent. Although some of those rejections are because the papers are off topic for *Monthly Weather Review*, most rejections are because the science does not meet our minimum standards or may need to be explained better. Defending the rejection of papers, the great fluid-mechanics scientist Batchelor (1981, p. 16), the founder and chief editor of the *Journal of Fluid Mechanics*, once wrote,

Papers of poor quality do more than waste printing and publishing resources; they mislead and confuse inexperienced readers, they waste and distract the attention of experienced scientists, and by their existence they lead future authors to be content with second rate work.

In the context of highly visible weather and climate research, published articles that reach questionable conclusions can also contribute to confusion in media reporting, thereby doing a disservice to both policy makers and the general public. Ideally, we—editors, authors, and reviewers—should work toward shifting the distribution upward to higher quality by improving all submissions rather than by simply rejecting the lower end.

To that end, June's editorial celebrating *Monthly Weather Review's* 150th year of publication was about how to be a more effective reviewer (Schultz 2022a). In this month's editorial, we present some of the top tips that our editorial board recommends to help improve submissions and reduce the rejection rate. Also, the [appendix](#) lists some of our favorite resources to help authors improve the quality of their science and its presentation. This editorial is not a comprehensive list, nor does it replace these other resources. Nevertheless, we hope that this editorial is helpful to those navigating the writing and publishing process for the first time or for the hundredth time.

#### 1. Paper preparation

Batchelor (1981, p. 8) wrote, "Reading a paper is a voluntary and demanding task, and a reader needs to be enticed and helped and stimulated by the author." The authors' job is to make their paper as readable and comprehensible as possible for reviewers and future readers, thereby inviting a broad readership to understand their science. As such, the goal should be submission of a carefully written and proofread paper: one that is written for its readers. Specifically, scientists are naturally inquisitive and like a good research question to solve. Writing the paper in such a narrative can more readily engage readers. To achieve this objective, authors should remember that the readership of *Monthly Weather Review* may be very broad, given the global reach of publications on the internet and the increasing interdisciplinarity of our field: scientific results and research methods from one discipline are increasingly needed and being adapted in other disciplines. As such, taking several steps backward and considering a more general audience than was often considered in the past may yield benefits in terms of article visibility and enhancing the accessibility of our publications. Specific approaches that authors can take include the following:

- Start with a storyboard of the paper. For example, compile the figures to be included in the paper, along with the key points for each of those figures. Then organize them into an order that will best tell the story of the research. As an author, the storyboard will help in writing the text of the paper more efficiently and will also make the paper more compelling to the readers.
- Make the submitted paper similar in organization and style to recently published articles. Follow the format requirements for AMS submissions. Reviewers will more easily recognize the paper as

suitable for publication if they can visualize it in the pages of *Monthly Weather Review*. The best way to do that? Read recently published articles and emulate them.

- Make the paper as easy to read and interpret as possible through effective layout and structure, using an appropriate number of numbered sections and lettered subsections while avoiding fragmentation of the text into too many short subsections and subsubsections. Indent paragraphs or use blank space between paragraphs.
- Make the paper flow smoothly from one topic to another through coherent-writing approaches such as the placement of old information at the beginning of each sentence and new information at the end (Gopen and Swan 1990). The lack of coherent writing is one of the most common weaknesses of submitted papers. One way to ensure coherence is to make a separate list of the topic sentences and see if the progression is logical. Keep each paragraph to a single topic. Start each paragraph with the topic sentence and end with the point to emphasize (Gopen and Swan 1990).
- Make the paper as easy to read and interpret as possible by using precise, accurate, and objective language. Use engaging verbs and avoid unnecessary adjectives and adverbs. Choose precise words wherever possible and avoid jargon (i.e., scientific terminology designed for insiders). Terminology that may be unfamiliar to the readers should be defined. It doesn't hurt to define even familiar terminology. A comparison (e.g., between two plots, current results vs past results, or observations vs model output) should be carefully documented rather than just passing off the comparison as "excellent agreement."
- Be specific in descriptions of physical processes. Consider the statement "the low-level jet played a primary role in the heavy-precipitation event". Many problems exist with this sentence. First, what does it mean for the jet to play "a primary role" in a process (convection) that requires three ingredients to occur (lift, instability, and moisture; Doswell et al. 1996)? Is the author saying that one is more important than the other? Second, is it even possible to quantify this statement? What is the relative importance of the low-level jet to the convection? If the jet were  $5 \text{ m s}^{-1}$  weaker, would the convection not occur? Third, the exact role that the low-level jet played is unstated. Was it the supply of moisture that was important? Was it the low-level wind shear that was important? Such phrases hinder precise scientific communication.

## 2. Introduction: Motivation for the research and purpose of the paper

The introduction section is the location where the author engages potential readers, motivates the research question, defines the purpose of the paper, and informs readers of its contents. A reader should quickly be able to assess "why is this important?" and "why should I care?". Importantly, the introduction revolves around the problem statement, the source of tension that motivates the research and draws the reader into the paper. As scientists, we like a good mystery to solve and the problem statement creates that mystery. Therefore, the best problem statements are those that engage the reader through a paradox, error, missing data/information, or inconsistency in the literature. A source of conflict between research groups/publications or differing interpretations of research results can also serve as a compelling problem statement.

The problem statement leads to a specific research question or questions that the paper will address. The more specific these are, the better. Studying a case because it was a heavy-precipitation event is certainly worthy, but it alone is an insufficient reason to publish in *Monthly Weather Review*. Instead, what is the scientific question that motivates this research? If a testable hypothesis can be articulated (not all research projects can), then this approach may motivate the paper, as well. Stating that this study will "explore" or "examine" is not precise enough. What new knowledge will be gained by study of this case? How does this paper differ from others, presenting new and original research results? Furthermore, the problem statement and the research questions should directly follow from an orderly evidenced argument from the literature, if possible.

Stating that there is a gap in the literature and that "very few studies have examined this topic" is not a particularly compelling problem statement. Either one of two things is typically the case: the author has not examined the literature with sufficient depth to discover that the literature has indeed touched upon this topic (even if outside the particular geographic region of interest of the author) or the research question may not be worth investigating (e.g., "very few studies have examined the relationship between pickle prices in the United States and the frequency of Indian Ocean tropical cyclogenesis" would be an exaggerated version of such).

The problem statement also allows a more focused presentation of the previous literature through only citing literature that builds up to the problem statement and avoiding the common tendency for authors to wander around various topics and cite broad swaths of literature. The synthesis of the

previous literature should tell a story, interweaving themes from one or multiple studies into a cohesive narrative rather than linearly describing the results one paper at a time. In this sense, literature syntheses should typically be science-focused rather than paper- or person-focused. Literature syntheses should help to introduce the research problem and the motivation for the paper.

Following the problem statement is the response to the problem: a brief exposition of what the author is going to do to address the problem statement. Such a response can sometimes be achieved by the last paragraph of the introduction, which often serves as a roadmap for the rest of the paper. Although not necessary, such paragraphs can be effective to explain how the paper addresses the problem statement as well as providing the structure of the paper to the reader beyond the basic introduction–methods–results–discussion–conclusions structure of a standard journal article. In addition, the paper should have an explicit statement akin to “The purpose of this paper is to . . .”. Such a statement allows the reader to compare the results at the end of the paper with the authors’ intent. That way, the author can be judged by their own stated goal. Other problems with introductions and how to fix them have been discussed by [Schultz \(2022b\)](#).

### 3. Take-home message

Another weakness of some papers is that the take-home message is unclear. What new results should readers remember? How are these new contributions to the scientific literature? The take-home message should feature in the abstract and the conclusion section, as well as the results section. The readers should be clear on why these results are important to understanding weather or improving numerical weather prediction, for example. The take-home message should not overstate the importance of the research, however.

### 4. Other parts of the paper

This section gives suggestions for handling the rest of the sections found in a typical American Meteorological Society (AMS) paper. Familiarize yourself with the AMS Author Resources online ([AMS 2022a](#)). Follow the guidelines for the elements of the paper, including abstracts, section types, figures, and references (refer often to the examples of reference types). Note that AMS has a limited set of figure widths that are used for print and PDF versions, a simple table style, and a specific way to set matrices, vectors, and scalar variables—authors can familiarize themselves with these styles by viewing past published AMS papers.

- Titles should provide specific and accurate information about the paper but in a concise package. The title should be grammatically correct, easy to read, and easy to understand. Avoid uncommon acronyms.
- Abstracts in AMS journals should be one paragraph and a maximum of 250 words. Because titles and abstracts may be the only parts of the paper read by potential readers, the resourceful author gets the most out of those 250 words through minimizing introductory material and maximizing results. In any case, more specific abstracts are more likely to be found via search engines ([Weinberger et al. 2015](#)), thus ensuring that the article receives a larger potential audience. AMS does not currently allow citations to figures or references in abstracts.
- Given the easy access to the scientific literature and the broadening of disciplines, the audiences for our articles are greater than ever before. Significance statements help to reach those nontraditional audiences and are aimed at the educated layperson without formal training or education in the atmospheric and related sciences ([Huntington and Lackmann 2020](#); [Schultz et al. 2020a](#)). Although optional, we encourage all authors to write a significance statement, limited to a maximum of 120 words. Examples are provided by [AMS \(2022b\)](#).
- Keywords for AMS journals are taken from those selected by the author when uploading the paper to the online Editorial Manager paper-management system. Thus, all keywords will be taken from the standard list that AMS provides. AMS requires at least three, but no more than six, keywords. Select keywords that reflect the main topic(s) of the paper, are frequently used in the text, and would help others doing web searches of the literature find the article. Avoid words that are used only one or two times.
- The principal test of a data and methods section is whether independent readers can replicate the study from the information in this section. If they cannot, then more detail is needed. Indeed, insufficient information about the data and methods is a typical reviewer comment. Try to remember and describe all of the steps involved in the research, including any preprocessing or filtering of the data.

- The results section may be one section or several. Results section(s) provide appropriate numerical or experimental evidence to demonstrate the validity of the claims in the paper. The results section should give a factual and objective description of the experiments performed or data collected to evaluate the proposed solution to the problem stated in the introduction. Where possible, the authors should state how their results relate to other literature, other cases, other models, and other parts of the world but should not overstate the generality of their results. The text style here should aim at guiding the reader through the succession of tests and evidence that support the ideas behind the paper. Use and compare the results with existing benchmarks and quality-assurance measures available in the literature whenever possible; new tests should only be proposed when they give insight that existing tests cannot provide. Do not include unnecessary results; do prioritize evidence that is essential for understanding the scientific significance of the paper. Longer portions of text and argumentative discussion of results are best left for a later discussion section.
- Authors are often unclear about the different purposes of the discussion and conclusions (or summary) sections. The discussion and conclusions sections in *Monthly Weather Review* should be separate sections. The discussion section occurs after the results section but before the conclusions section, which summarizes the paper. The discussion section is best for longer pieces of text and for content that does not belong in the results section, such as generalizing the results to other cases, elaborations on interpretations, synthesis of results, applications, implications, unresolved issues, or alternative interpretations. In contrast, the conclusions section should consist of a summary of the paper that is longer than the abstract (roughly 500–800 words so that it is not simply a restatement of the abstract) and perhaps some brief concluding remarks about the significance or application of the paper's results. The conclusions section should revisit the research questions raised in the introduction and bring closure to the paper. In short, elaboration and extrapolation belong in a discussion section; summarizing belongs in the conclusions section.
- Please recognize in the acknowledgments section all who have helped in the research and preparation of the paper, including funding agencies and data/software providers. Acknowledge the contribution of the anonymous reviewers, whose comments helped to improve the paper. Such collegiality is not necessary but is generally appreciated.
- Provide formal citations to datasets used in the paper in the data availability statement ([Schultz et al. 2020b](#)), if not also in the body of the paper. Many dataset archives now make this easy with DOIs. Clear dataset citations credit the dataset creators and make the science more readily reproducible. In the case in which authors create their own datasets, data and computational workflows underpinning the results should be shared in an appropriate repository, even if it is not required by the funding agency. The more data and code that are provided, the more that reviewers and readers will better understand the results, assess their veracity, and replicate the approach to facilitate further advances in understanding. Not all of a project's data, particularly in the case of simulation-based studies, needs to be saved. Although formal guidance as to how much of a dataset and how many workflows to save has yet to be developed, we recommend that studies geared primarily toward knowledge production (as is often the case in *Monthly Weather Review*) prioritize retaining and sharing computational workflows, notebooks, and the data necessary to replicate the study's findings (e.g., [Mullendore et al. 2021](#); [Erdmann et al. 2022](#)), as previously discussed for the data and methods section above. Authors should confirm that any URLs to data sources are still active and correct. More on citing datasets and the data availability statement can be found at [AMS \(2022c,d\)](#).
- References should appear in a complete and consistent format upon submission for the assurance and convenience of the reviewers. Upon acceptance of the paper, the reference list will go through more rigorous checking and formatting during the construction of the page proofs. Try to avoid references that cannot be found anywhere online or in print, like a conference presentation that does not exist as a preprint or in published proceedings. References to sources not in English should include the English translation of the title in parentheses and type of document being referenced. Citation guidelines for many common reference types can be found at [AMS \(2022e\)](#).
- Figures should present the results clearly, should avoid too many overlapping fields that are difficult to interpret, and should omit unnecessary figure panels. Figures and their embedded text (e.g., labels on axes, contours, and color bars) should be large enough to be readable, and the quality should be sufficient to avoid pixelation. This requirement often necessitates choosing a font size that appears too large when viewing the figure in isolation, as the rendered version in the typeset paper will be smaller. Choose sans serif fonts, if possible. Avoid the rainbow color scheme, because it exaggerates gradients and is not well-suited for color-blind individuals (e.g., [Stauffer et al. 2015](#)). Captions should be complete and explain all features of the figure. If figure panels have letter labels, then these should

be used in the caption for the reader's benefit. Figures (and tables) must be cited sequentially, unless there is a parenthetical note such as "(see Fig. 7 later in the paper)." The text accompanying the figures in the main body of the paper should be more than a mere description of the figures without any interpretation. Ensure that the text in the paper says why the figure is needed, sufficiently explains the figure, and says what the figure means.

## 5. Decision processes and handling a rejected paper

Peer reviewers at AMS journals are not referees as in a football game. Although reviewers make recommendations to the editors on the suitability of the paper for publication in *Monthly Weather Review*, only editors make decisions. These decisions might not be based on majority rule, and these decisions may be different from the recommendations provided by the reviewers. In addition, editors often weigh in on the suitability of the paper for *Monthly Weather Review*, add their own comments as subject-matter experts, interpret reviewer comments, and synthesize reviewer comments.

Rejection at *Monthly Weather Review* is not a decision that generally prevents authors from revising the paper and resubmitting it to *Monthly Weather Review* or that prevents submission to another journal. Some rejections are because the anticipated revisions would take longer than the 2 months allotted by AMS for revisions. Although authors may be disappointed with the rejection, such rejections allow the authors unlimited time to consider the reviewers' and editor's comments and determine the best way to modify the paper that addresses the reviews before resubmission to *Monthly Weather Review* or submission at a different journal. Such flexibility can ultimately benefit the published article.

## 6. Responding to reviewers and editors

Getting a paper accepted at a journal can typically take one to three rounds of back-and-forth with reviewers and the editor, with each round taking 1–3 months. The number of rounds that revisions take can be minimized when authors and reviewers engage positively and constructively during each round, resulting in an efficient and effective peer-review process. From the authors' perspective, this means making optimal use of the comments and recommendations made by the reviewers through careful, comprehensive revisions to the paper and complete, well-reasoned responses to the reviewers and the editor. Because authors have invested a lot of time, effort, and emotion into their paper, it can be natural to be on edge when taking in the reviewers' and editor's comments. Rather than letting it spawn a "fight or flight" response, let this edge sharpen the authors' focus during revision. Consider how an outside observer who lacks the depth of knowledge about the research would perceive what has been written. Remember that the reviewers have also invested a considerable amount of time and energy in making recommendations on how to improve the presentation of the research. The goal of everyone involved in the peer-review process is to end up with the best possible outcome for the work. In this framework, assume positive motives behind each comment to the extent possible, bringing any concerns about unconstructive comments to the editor's attention during revision. Approaching revision and reviewer responses in this way generally enables authors to address issues in the paper that may not have been immediately apparent and facilitates constructive discussions with reviewers throughout the peer-review process.

Perhaps the easiest way to see how this might work is for the authors to put themselves in the reviewers' shoes. Reviewers are volunteers whose goal is to help improve the paper. Being anonymous, they receive no credit for their efforts, so their reward is seeing authors benefit from their guidance and input. If you (the author) were the reviewer of somebody else's paper and spent 10 hours (the typical time that reviewers spend with your submitted paper; [Golden and Schultz 2012](#)) reading the paper and writing up your review, you would probably want to see that the authors acknowledged that they read and understood each comment; acknowledged that they took your comment seriously, even if they disagreed with it; and responded to the comment and revised the paper. The exchange between authors and reviewers can go off the rails when the author fails in one or more of these three things. Thus, here is a proposed framework for responding to reviewers' and editor's comments.

- 1) Acknowledge whether you, as author, agree or disagree with the basis of the comment.
- 2) If you agree, say what you have done to the paper to revise it in accordance with the reviewer's wishes and where in the paper you have done so. Please be as precise as possible to ensure that you understood the comment and have responded appropriately. It often helps to copy the exact revised text into your responses and provide line numbers of where these changes were implemented to aid the reviewer and editor in evaluating the modifications. If you address the comment in your responses but no change is needed to the paper, please indicate that in your response as well. If the

- reviewer's concern has been alleviated or eliminated through major rewriting of the text, then a simple acknowledgment of this fact is sufficient.
- 3) If you disagree, provide an argument, using evidence from new calculations or citations from previous literature that show the validity of your argument, and explain why you disagree. You are free to disagree with the reviewers—differences of opinion, interpretation, and conclusions are inevitable. Regardless, respond point by point to all of the comments—not just specifically to the individual points by the reviewer, but also to the spirit that all of the comments taken together are trying to convey. Addressing specific comments in your responses but not fixing the underlying issues with the paper is a suboptimal outcome of the peer-review process. Remember that future readers do not have access to your exchanges with the reviewers, so addressing sources of possible concern within the paper is preferable to an extended response. If additional calculations or figures are required to address a reviewer's comment and those figures are included in the response to the reviewers, then such figures should be strong candidates for inclusion in the revised paper, even if included in a published online supplemental file.
  - 4) Finish with a clear statement that you acted on their concern, either something like “No revision to the paper” or, preferably, some revision to the paper so that future readers will not ask the same questions as the reviewer. Do not write vague responses such as “The paper has been revised” or “The introduction has been rewritten.” Do not make reviewers track down where in the paper those changes are or make them wonder if the substance of their concern has been addressed. For example, the decision letter that AMS journals send out specifically states: “If you have made a change to the paper, please indicate where in the paper the change has been made. (Indicating the line number where the change has been made would be one way, but is not the only way.)”

Copy and paste the reviews and editor comments into a file. Interspersing responses in between the original comments in a different font or color makes it easier for the reviewers and editor to assess how well their concerns were addressed and contributes to a smoother, more effective peer-review process.

Authors should do their best to ensure that they understand the reviewers' comments. If the comment is unclear, it may be useful to ask the editor for clarification. Authors could also respond, “If I understood what you are saying, then you mean . . . .” If it is a genuine misunderstanding from the lack of clarity in the writing, revise the paper so that other readers do not misinterpret the paper in the same way.

Often when reviewers feel that their comments have not been adequately addressed, they will bring that issue up again in the next round of review. Inadequately addressed comments slow down the peer-review process as well as frustrate the reviewer and often also the editor. Avoid this by following the four-step process enumerated above. If editors find that authors are not addressing the reviewers' comments, then they can send the paper back to the authors for further revision or they can reject the paper because it is not progressing toward a publishable outcome.

Do not pit reviewers against each other in the response (e.g., “Reviewer 2 said that this section was well-written, so I do not have to make the changes requested by Reviewer 1.”). Just because another reviewer agrees with the authors on a point (or does not mention a concern) does not mean that it is necessarily the correct one. Respond to each reviewer's concerns individually.

It is not uncommon to see divergent recommendations sent to the editor by the reviewers of a submitted paper. When arriving at the decision delivered to the authors, the editor has taken the content of the reviews and expertise of the reviewers into account. The best strategy for revisions and responses under these conditions remains the same as the framework laid out above, with each comment from each reviewer being diligently addressed. If authors are uncertain about the editor's expectations or require additional guidance under these conditions, contact the handling editor for advice. Submitting an additional document with tracked changes is not mandatory but does make it easier for some reviewers to check how their comments have been addressed. Making reviewers' and editor's work easier can result in a faster reviewing process.

## 7. Frequently asked questions

- *I've heard that AMS considered banning case studies. Is there truth to that rumor?* AMS journals welcome insightful case studies that contribute to our scientific knowledge. Like all submissions, case studies must meet minimum standards for publication. To avoid overgeneralizing results from a single case, submissions should discuss why this particular case was chosen and discuss the generality of results beyond a single case. More guidance about writing case studies can be found in [Schultz \(2010b\)](#).
- *I reused text in my present submission from an earlier article that I published. The editor sent it back to me for revisions because of self-plagiarism. What does that mean?* Although it is unethical to

publish the same content twice, effective communication in science requires clear and precise descriptions. As such, authors may duplicate text, especially from data and methods sections, from earlier publications. To avoid self-plagiarism or copyright violations, duplicated text should cite the original source and indicate that the text largely follows from that source (e.g., “The description of the methods is similar to that of Jones et al. (2021), and the following two paragraphs are derived from there with minor modifications.”). More on plagiarism and self-plagiarism can be found in [Schultz et al. \(2015\)](#).

- Reviewers will sometimes write, “I’ve noticed grammatical problems, but the copy editors will fix those in the construction of the page proofs.” Is this right? Although it is part of copy editors’ jobs to catch errors authors and reviewers miss, accepted papers that require extensive copyediting are expensive to prepare for publication and eventually increase publishing fees for all authors. Furthermore, reviewers will have to review a paper that is not in its final form, frustrating them and slowing down the peer-review process. Authors, and not AMS staff, should therefore be taking on the bulk of the proofreading effort. As W. J. Steenburgh said, authors should only submit a paper that they would be comfortable publishing as is ([Schultz 2009](#), p. 167).
- Can I use parentheses to shorten sentences, as in the example: “warm (cold) advection at 700 hPa was east (west) of the cyclone center”? Although such constructions have been common in published articles in the past, avoid these parenthetical constructions in submissions to *Monthly Weather Review*. Such sentence structure makes it difficult for a reader to follow the meaning of the text and may be confusing when parentheses are used correctly in other sentences ([Robock 2010](#)).
- May I introduce new acronyms in my paper? Papers with unfamiliar acronyms make it difficult for readers, as readers encountering an unfamiliar or forgotten acronym must flip back through the paper to track it down. Also, acronyms challenge readers who do not read the paper linearly from introduction to conclusion, but instead skip around through the paper, to get the relevant information they require. Introducing acronyms may save the author time during paper generation, but it slows down the readers. Please eliminate many, if not all, nonstandard acronyms to improve the readability of the paper. The list of AMS-approved acronyms that do not need to be defined in AMS journals can be found at [AMS \(2022f\)](#). Any others should probably not be introduced (e.g., [Schultz 2022c](#)). If a new acronym must be introduced and is not on the AMS list, authors must provide the full name and set the acronym after it in parentheses.

## 8. Guidance for nonnative English speakers

We recognize the challenges that nonnative English speakers face—some of us editors are nonnative English speakers ourselves. Not only do they have to get the science right and communicate it in the right style, but they have to do it in a language that is not their mother tongue. Poor writing style in a submitted paper generally does not lead to rejection, but it can inhibit the ability of a reader to understand the paper. Thus, improving the submission at the start will ensure a smoother path through peer review. AMS reviewers, editors, and staff do not have the time available to edit papers that require extensive grammatical changes. Although AMS wishes to encourage the international exchange of scientific results through its journals, it requests that such authors make their own arrangements to ensure that submitted papers are already in correct English. If not, their submissions may be returned unreviewed or rejected.

There are a number of different ways to get assistance:

- Ensure that spell checkers and grammar checkers are turned on in the word-processing program.
- Specialty grammatical tools and translation apps can be installed on browsers or laptops.
- Google Docs and other word-processing programs such as Microsoft Word offer predictive tools that can assist in improving sentence-writing.
- If unsure about a word or phrase, put it into a search engine. There is no guarantee that search results will mean it is correct; but only a few hits being returned may mean that it is not well used or is incorrect. Alternatively, search AMS published articles for common usage. Another useful resource is the English Collocations Dictionary to assist with choosing the right word pairs or context (<http://ozdic.com>).
- Writing down useful words, phrases, or sentences to maintain a digital and personalized document to search can also be helpful.
- English-language editing services can be purchased to improve papers before submission. The AMS offers a web page listing some of them ([AMS 2022g](#)).

## 9. Summary

Peer review does not ensure that all the science published is correct, but it does try to ensure a basic level of quality assurance set by the standards of the journal's editors with the assistance of the reviewers. Given that only 56.7% of submitted papers are accepted for publication at *Monthly Weather Review*, acceptance is not inevitable. We hope that the guidance in this editorial helps authors improve their papers prior to publication, thereby ensuring greater success for publication. The rigorous peer-review process at *Monthly Weather Review* can be challenging for authors, but we hope that the feedback from reviewers and the dialogue with editors improves each paper and provides us all with an opportunity for continued learning.

*Acknowledgments.* We editors thank the authors for their continued trust in *Monthly Weather Review*, the reviewers for their essential contributions to the peer-review process, and the AMS staff for their hard work and dedication to ensuring a high-quality issue each month. We thank the AMS Publications Department staff for comments that improved an earlier draft of this editorial. A portion of this research was carried out at the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.

## APPENDIX

### Additional Resources for Authors

Naturally, one resource to which we are partial has been published by the American Meteorological Society: *Eloquent Science: A Practical Guide to Becoming a Better Writer, Speaker, and Atmospheric Scientist* (Schultz 2009). The book has been translated into Chinese and published by the China Meteorological Press (Schultz 2021). In addition, we recommend the following books:

- Day and Gastel (2006): *How to Write and Publish a Scientific Paper*.
- Glasman-Deal (2021): *Science Research Writing for Native and Non-Native Speakers of English, 2nd ed.*
- Schimel (2012): *Writing Science: How to Write Papers that Get Cited and Proposals that Get Funded*.
- Strunk and White (2000): *The Elements of Style*.
- Sword (2012): *Stylish Academic Writing*.
- Zinsser (2012): *On Writing Well: The Classic Guide to Writing Nonfiction, 30th Anniversary Edition*.

An essential article to read about the expectations of readers of scientific writing is Gopen and Swan's (1990) "The science of scientific writing." In addition, we recommend a number of online sources for improving writing:

- Chicago Manual of Style online (<https://www.chicagomanualofstyle.org>)
- Purdue Online Writing Laboratory (<https://owl.purdue.edu/owl>)
- Kathleen Jones White Writing Center of the Indiana University of Pennsylvania (<https://www.iup.edu/writingcenter/writing-resources/index.html>)
- Grammarly (<http://www.grammarly.com>)
- English Style Book (<https://www.litencyc.com/stylebook/stylebook.php>)

David M. Schultz  
Chief Editor

Jeffrey Anderson, Tommaso Benacchio, Kristen L. Corbosiero, Matthew D. Eastin, Clark Evans, Jidong Gao, Joshua P. Hacker, Daniel Hodyss, Daryl Kleist, Matthew R. Kumjian, Ron McTaggart-Cowan, Zhiyong Meng, Justin R. Minder, Derek Posselt, Paul Roundy, Angela Rowe, Michael Scheuerer, Russ S. Schumacher, Stan Trier, Christopher Weiss,  
Editors



## REFERENCES

- AMS, 2022a: Author Information. AMS, <https://www.ametsoc.org/index.cfm/ams/publications/author-information/>.
- , 2022b: Significance Statements. AMS, <https://www.ametsoc.org/index.cfm/ams/publications/author-information/significance-statements/>.
- , 2022c: Dataset References and Citation Examples. AMS, <https://www.ametsoc.org/index.cfm/ams/publications/author-information/formatting-and-paper-components/references/dataset-references-and-citation-examples/>.
- , 2022d: Data Availability Statement Examples. AMS, <https://www.ametsoc.org/index.cfm/ams/publications/author-information/formatting-and-paper-components/data-availability-statement-examples/>.
- , 2022e: References. AMS, <https://www.ametsoc.org/index.cfm/ams/publications/author-information/formatting-and-paper-components/references/>.
- , 2022f: List of Acronyms and Abbreviations. AMS, <https://www.ametsoc.org/ams/index.cfm/publications/authors/journal-and-bams-authors/author-resources/list-of-acronyms-and-abbreviations/>.
- , 2022g: Presubmission Editing Services. AMS, <https://www.ametsoc.org/index.cfm/ams/publications/author-information/pre-submission-editing-services/>.
- Batchelor, G. K., 1981: Preoccupations of a journal editor. *J. Fluid Mech.*, **106**, 1–25, <https://doi.org/10.1017/S0022112081001493>.
- Day, R. A., and B. Gastel, 2006: *How to Write and Publish a Scientific Paper*. 6th ed. Cambridge University Press, 302 pp.
- Doswell, C. A., III, H. E. Brooks, and R. A. Maddox, 1996: Flash flood forecasting: An ingredients-based methodology. *Wea. Forecasting*, **11**, 560–581, [https://doi.org/10.1175/1520-0434\(1996\)011<0560:FFFAIB>2.0.CO;2](https://doi.org/10.1175/1520-0434(1996)011<0560:FFFAIB>2.0.CO;2).
- Erdmann, C., S. Stall, B. Hanson, L. Lyon, B. Sedora, M. Giampoala, and M. Ricci, 2022: Notebooks Now! Elevating computational notebooks. *Eos*, **103**, <https://doi.org/10.1029/2022EO225024>.
- Glasman-Deal, H., 2021: *Science Research Writing for Native and Non-Native Speakers of English*. 2nd ed. World Scientific, 356 pp.
- Golden, M., and D. M. Schultz, 2012: Quantifying the volunteer effort of scientific peer reviewing. *Bull. Amer. Meteor. Soc.*, **93**, 337–345, <https://doi.org/10.1175/BAMS-D-11-00129.1>.
- Gopen, G. D., and J. A. Swan, 1990: The science of scientific writing. *Amer. Sci.*, **78**, 550–558, [https://www.usenix.org/sites/default/files/gopen\\_and\\_swan\\_science\\_of\\_scientific\\_writing.pdf](https://www.usenix.org/sites/default/files/gopen_and_swan_science_of_scientific_writing.pdf).
- Huntington, H. P., and G. M. Lackmann, 2020: Stating the significance of our work. *Wea. Climate Soc.*, **12**, 645, <https://doi.org/10.1175/WCAS-D-20-0066.1>.
- Mullendore, G. L., M. S. Mayernik, and D. C. Schuster, 2021: Open science expectations for simulation-based research. *Front. Climate*, **3**, 763420, <https://doi.org/10.3389/fclim.2021.763420>.
- Robock, A., 2010: Parentheses are (are not) for references and clarification (saving space). *Eos, Trans. Amer. Geophys. Union*, **91**, 419, <https://doi.org/10.1029/2010EO450004>.
- Schimel, J., 2012: *Writing Science: How to Write Papers that Get Cited and Proposals that Get Funded*. Oxford University Press, 221 pp.
- Schultz, D. M., 2009: *Eloquent Science: A Practical Guide to Becoming a Better Writer, Speaker, and Atmospheric Scientist*. Amer. Meteor. Soc., 412 pp., <https://doi.org/10.1007/978-1-935704-03-4>.
- , 2010a: Rejection rates for journals publishing in the atmospheric sciences. *Bull. Amer. Meteor. Soc.*, **91**, 231–244, <https://doi.org/10.1175/2009BAMS2908.1>.
- , 2010b: How to research and write effective case studies in meteorology. *Electron. J. Severe Storms Meteor.*, **5** (2), <https://ejssm.org/archives/wp-content/uploads/2021/09/vol5-2.pdf>.
- , 2021: 论文写作、科技交流与审稿: 成为杰出科学家的必由之路 (*Paper Writing, Scientific and Technological Exchanges and Paper Review: The Only Way to Become an Outstanding Scientist*). Translated by H. Kong, Y. Han, F. Zhao, M. Song, and J. Gao, China Meteorological Press, 316 pp.
- , 2022a: How to be a more effective reviewer. *Mon. Wea. Rev.*, **150**, 1201–1205, <https://doi.org/10.1175/MWR-D-22-0102.1>.
- , 2022b: The five most common problems with introductions. <http://eloquentscience.com/2022/02/the-five-most-common-problems-with-introductions/>.
- , 2022c: Eliminate excessive and unnecessary acronyms from your scientific writing. <http://eloquentscience.com/2021/12/eliminate-excessive-and-unnecessary-acronyms-from-your-scientific-writing/>.
- , R. M. Rauber, and K. F. Heideman, 2015: AMS policy on plagiarism and self-plagiarism. *Mon. Wea. Rev.*, **143**, 417–418, <https://doi.org/10.1175/2015MWR1111.1>.
- , G. M. Lackmann, H. P. Huntington, and M. A. Friedman, 2020a: Significance statements broaden our audience. *Mon. Wea. Rev.*, **148**, 3569–3570, <https://doi.org/10.1175/MWR-D-20-0193.1>.
- , and Coauthors, 2020b: Data availability principles and practice. *Mon. Wea. Rev.*, **148**, 4701–4702, <https://doi.org/10.1175/MWR-D-20-0323.1>.
- Stauffer, R., G. J. Mayr, M. Dabernig, and A. Zeileis, 2015: Somewhere over the rainbow: How to make effective use of colors in meteorological visualizations. *Bull. Amer. Meteor. Soc.*, **96**, 203–216, <https://doi.org/10.1175/BAMS-D-13-00155.1>.

- Strunk, W., Jr., and E. B. White, 2000: *The Elements of Style*. 4th ed. Allyn and Bacon, 105 pp.
- Sword, H., 2012: *Stylish Academic Writing*. Harvard University Press, 220 pp.
- Weinberger, C. J., J. A. Evans, and S. Allesina, 2015: Ten simple (empirical) rules for writing science. *PLOS Comput. Biol.*, **11**, e1004205, <https://doi.org/10.1371/journal.pcbi.1004205>.
- Zinsser, W., 2012: *On Writing Well: The Classic Guide to Writing Nonfiction (30th Anniversary Edition)*. Harper, 335 pp.