Demystifying the publishing process: a primer for early career investigators

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Those of us who have been working in academia, industry, or other laboratory environments for many years are, hopefully, quite well versed in the skills necessary to get original research articles published in high-quality, peer-reviewed journals. I am not referring to the scientific process or the technical skills necessary to carry out good science. I am talking about the process by which a manuscript becomes a published article. For scientists in the early stages of their careers, this can seem daunting. Even the electronic submission procedures can be initially tedious to navigate for the novice. Many questions arise. What happens to one’s manuscript after one hits the submit button? How is the associate editor (AE) selected? How are reviewers selected? How are decisions made? I will tackle these questions and other questions as the focus of this editorial.

During my relatively short tenure to date as editor in chief (EIC) of this journal, it has become apparent that there are many scientists, especially early career investigators, who are not sufficiently aware of the process by which a manuscript becomes a published article. Twenty-five or so years ago, it was relatively easy to mail a manuscript to a journal editorial office and wait for a decision, usually many weeks later. While this may have been a simple task, the time to publication was significantly prolonged. This is not the case today. Virtually every journal requires authors to submit online using manuscript submission systems with varying degrees of complexity. Most of these systems offer authors a window into the peer review process—the current status of the manuscript—but terminology, detailed information, and levels of access differ per system, journal, society, and publisher. I will attempt to provide here some clarity for the American Journal of Physiology-Heart and Circulatory Physiology (AJP-Heart Circ Physiol) manuscript flow.

The Hierarchy

First, it is important to understand how a journal, in this case AJP-Heart Circ Physiol, is organized and managed. Every journal has an EIC. Right now, that’s me. The tenure of each EIC for American Physiological Society (APS) journals is 3 years, with the option to renew for an additional term if performance is deemed satisfactory by the APS Publications Committee. The EIC selects a group of AEs. The number of AEs depends on the volume of manuscripts traditionally submitted to the journal. The selection of AEs is based on areas of expertise and scientific reputation. Every APS journal has an editorial board consisting of scientists who are called upon frequently to evaluate the scientific merit of submitted papers. The AJP-Heart Circ Physiol editorial board ranges from 150-170 members in any given year. After careful analysis of editorial board member reviewer performance, the AEs and I determine which editorial board members to rotate off and which expert candidates to invite as new members. In AJP-Heart Circ Physiol, the expertise of our editorial board members spans a large number of areas related to the physiology and pathophysiology of the heart and vasculature. Our editorial board members are highly published experts who can evaluate most areas of cardiovascular physiology. Finally, we have an executive editor, Kara Hansell Keehan, and an editorial consultant, Michelle Gaffney, who handle the daily operations of the journal and interact with the leadership of the society. These names are important to remember because it is likely you will interact more with our editorial staff than with me on issues related to shepherding your manuscript through the peer review system.

The APS Publications Committee serves as a board of directors for the entire APS publications program. The APS publications department maintains a staff of production editors, copyeditors, and art editors who are responsible for the production of each online journal issue.

What happens after files are submitted?

If you have followed all the “Instructions for Authors” and have survived the electronic submission process, what happens next? I know too many it seems like the files you submit languish in cyberspace for some time until human beings actually look at them. However, I assure you that the process of examination of the files you submit starts almost immediately upon submission. The APS publications peer review coordinator dedicated to AJP-Heart Circ Physiol scrutinizes the files for proper format and file structure and ensures that copyright release forms are submitted. Once the manuscript passes our quality control checks, it is sent to the EIC for assignment to an appropriate AE. I usually examine the submission within 6 h of receipt. To assign the manuscript to the appropriate AE, I read the abstract and look over the manuscript, especially the data and figures. I scrutinize the paper to determine if it is appropriate for our journal, meaning that the manuscript must contain at least some mechanistic cardiovascular physiology. A purely descriptive or anatomical study is not appropriate for AJP-Heart Circ Physiol. Similarly, a clinical study that does not shed light on physiological mechanisms is not appropriate for this journal. If a paper is not appropriate for AJP-Heart Circ Physiol, I will render a rejection decision based on these facts and will not send the paper to an AE. However, before a decision is made to reject a paper without review, I will consult with one or more AEs to obtain a consensus. If any AE believes the paper should be reviewed, it will be. Rejection of papers without a review represents less than 10% of all decisions rendered by our editorial team. If a paper is worthy of full review, I will select the AE who is most appropriate to handle the review process based on the subject matter of the manuscript and the current editorial workload of the AEs. I mention this latter point because sometimes authors are dismayed that the AE whom they recommended was not...
used to handle their paper. Rest assured that every attempt to use the recommended AE will be made.

Assigning Reviewers

By design, AEs are experts in a given area of cardiovascular physiology. Therefore, they know the best-qualified individuals to review your manuscript. For our journal the default number of reviewers is three. To obtain three reviewers, AEs may have to ask 8–10 people to review. Most often reviewers decline to review because they are too busy, out of the office, or have a conflict of interest with the authors of the paper. The first three reviewers who commit to review a manuscript are assigned to that paper, and all others are sent an automatic email from our manuscript tracking system informing them that we have reached our reviewer quota. So, if you are asked to review and really want to, respond as soon as you can. We often have three reviewers agree to review a manuscript within 24 h of receiving an invitation to review. All reviewers are requested to return their reviews within 14 days for original research articles and within 10 days for rapid reports. We are proud to report that our average time to a first decision is ~18 days total, which includes the time taken to assign an AE and obtain three reviewers. Reviewers are reminded when the review date is near and are continually reminded if a review is overdue. Occasionally, a reviewer will never return his/her review. In this case the AE will either act as a third reviewer or make a decision based on two reviews. This, of course, delays the process and happily does not happen very often. It should be noted that AEs make an effort to invite reviewers who are recommended by authors. However, AEs are not obligated to use these suggested reviewers and rarely use more than one author-suggested reviewer. After all of the reviews are complete, the AE is alerted via an automated e-mail that he/she should render a decision.

The Decision

It can seem like an eternity waiting for a decision on your paper. You think the study is good. You believe it is technically sound and that the data support the conclusions and that this piece of work will make a major contribution to the field. Of course, it will be accepted! In reality, almost no papers are accepted after the first review. More than likely your paper will fall into one of four decision categories: major revision, minor revision, reject with referral, or rejection. A large number of papers receive a major revision decision. This decision usually reflects serious concerns of the reviewers that may relate to study design, rationale, technical issues, or a myriad of other potential flaws. However, the AE and the reviewers most likely recognized that the study was potentially important and can be salvaged with additional work, sometimes necessitating more experiments. The second category of decision that you may receive is that the paper is potentially acceptable following minor revisions to the manuscript. As with most manuscripts in this category, the reviewers are requesting clarification on various issues or reformattting of figures for clarity, etc., but they generally liked the study and the way it was carried out. They felt it makes a significant contri-

bution to the field. If you get this kind of decision, you should be happy because it will likely not be long before the paper is accepted.

The third decision category is somewhat specific to the APS and the Physiological Society journals—rejection with referral to Physiological Reports. Physiological Reports is a relatively new open access journal that is a cooperative effort between the two largest physiological societies. If you receive this decision, you will have the option of transferring your paper to Physiological Reports along with the reviews provided by JAP-Heart Circ Physiol. Physiological Reports will then make a decision on acceptability within a few days. Papers published in Physiological Reports may be more descriptive or of lesser impact than those published in JAP-Heart Circ Physiol, but are still well-done, scientific studies. The last decision category is simply rejection. Currently our journal rejects ~50% of the papers we receive. A rejection usually indicates that the study is flawed in many ways. This may include poor design, relevance of the question, poor data collection, and numerous other issues. A rejection letter means that the editors will not consider the paper any further. If this happens to you, just remember that it happens to just about everyone at some point, even the most senior investigators. After a rejection letter, it is time to discuss the reviews with your coauthors and decide if you want to send it to another journal or reevaluate the study and its implications in light of the reviews. If a paper is not rejected but you, the author, decide not to revise the paper, it is helpful and professional to notify the journal that it will not be revised and resubmitted. This will remove your article from our electronic system and update our statistics.

Final Thoughts

Figure 1 outlines the process that takes place after a manuscript is submitted. It should be pointed out that this is somewhat specific for our journal and that some of the steps in the process vary slightly from one APS journal to another. Getting a paper published in a high-profile journal in your field is a major accomplishment. It may take a long time and be fraught with many emotions and additional work, but in the end, it’s worth the trials and tribulations. From the journal and editorial standpoint, our goal is to provide a streamlined submission
process; a comprehensive, fair, and rapid review process; and constructive criticisms that will ultimately make the science better. There are occasions when decisions may seem out of sync with the reviews. Please remember that reviewers transmit comments and additional information to editors that may influence their decisions. At *AJP-Heart Circ Physiol*, we welcome e-mail inquiries for further clarification on a specific manuscript review.

For those of you who are new to the publication process, I hope this has helped demystify the process. If you have specific questions, please e-mail the editorial office (khkeehan@verizon.net). On behalf of the entire editorial team at *AJP-Heart Circ Physiol*, we sincerely hope you are devoted followers of the great cardiovascular research published here and we look forward to receiving your best work.

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**AUTHOR CONTRIBUTIONS**

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