Career Development Series 2021

Publish and Flourish:
Tips for Writing and Submitting Your Manuscript

Presentation will begin at 12:00 PM (PT)

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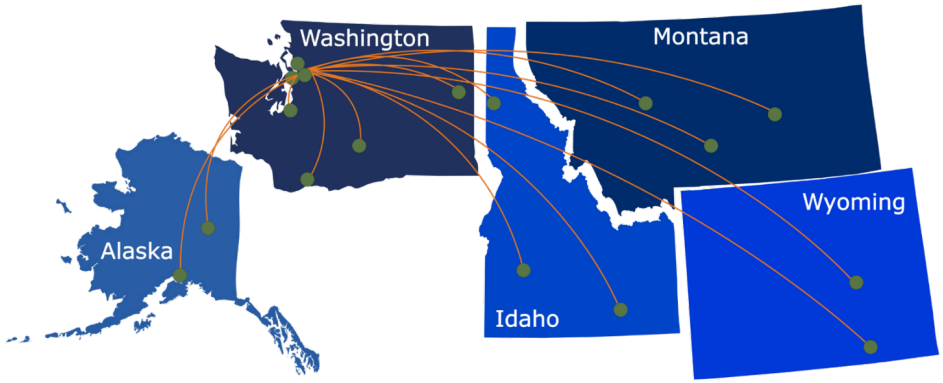

What We Offer:

1. **Research Support Services:** Members gain access to the different research services, resources, and tools offered by ITHS, including the ITHS Research Navigator.

2. **Community Engagement:** Members can connect with regional and community based practice networks

3. **Education & Training:** Members can access a variety of workforce development and mentoring programs and apply for formal training programs.

4. **Funding:** Members can apply for local and national pilot grants and other funding opportunities. ITHS also offers letters of support for grant submissions.

Contact our Director of Research Development

- **Project Consultation**
- **Strategic Direction**
- **Resources and Networking**

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Feedback

At the end of the seminar, a link to the feedback survey will be sent to the email address you used to register.

Career Development Series 2021

Publish and Flourish: Tips for Writing and Submitting Your Manuscript

Presented by:

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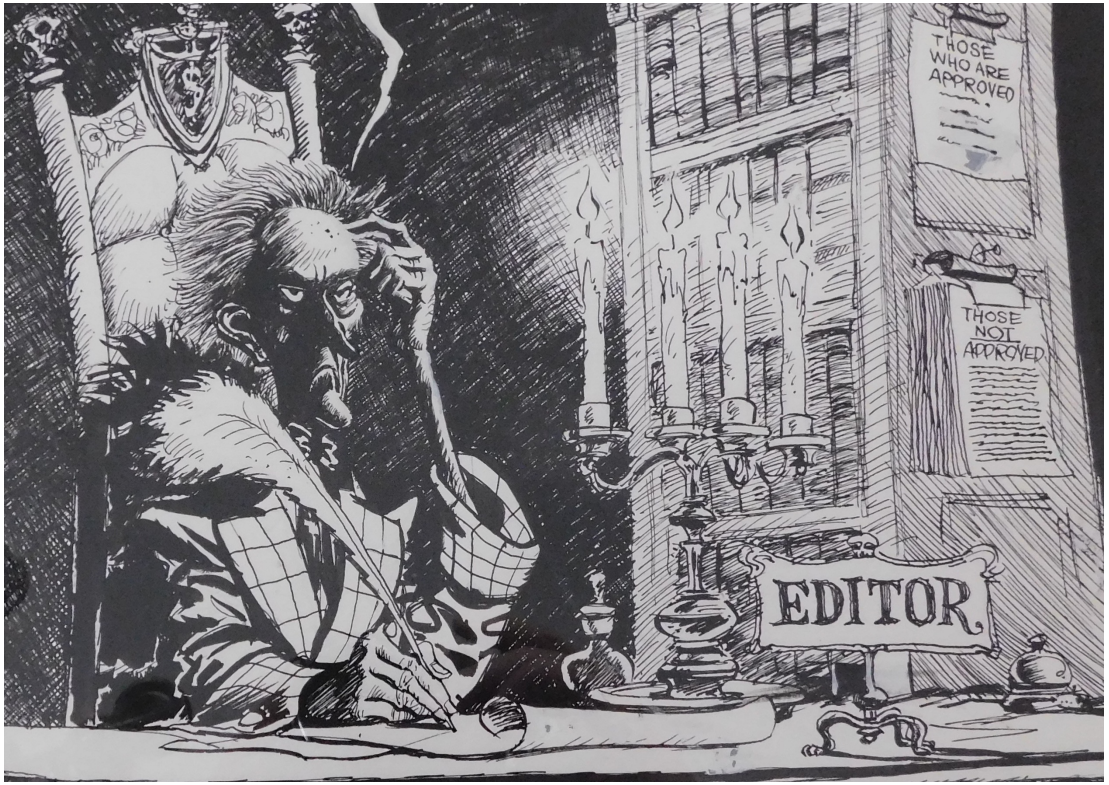
Learning Objectives

1. List two approaches for beginning to draft a manuscript
2. Describe two ways in which the Results section of a manuscript differs from the Discussion section
3. List three criteria to consider in choosing a journal for my manuscript

Experience of the Presenter

- Editor-in-chief of a major pharmacology journal published by a professional society
- Journal has been at the forefront in developing guidelines for addressing statistics and reproducibility in publishing
- Grant reviewer for multiple federal agencies (NIH, NSF, VA, DOD)
- Participates in sessions at national meeting to train junior scientists to be manuscript reviewers
- Previously taught entire course in scientific writing, with students writing papers during the course



by Spokane newspaper cartoonist Ivan Munk

Outline

I. Introduction
- Writing as a career skill

II. Tips for manuscript writing
- Getting started – the story
- Choosing a journal
- Instructions to authors
- Organization of a manuscript

III. Responsible conduct in manuscript writing
- Authorship, Plagiarism, Image manipulation, Statistical Analysis

IV. What are reviewers looking for?
- How to think like a reviewer

Introduction

Why Do Researchers Publish?

- It is their responsibility to publish results of research supported by public funds.
- Publications build upon each other…one is often the stepping stone to another in a continuing “story”.
- Publication is absolutely critical for research career development, for both faculty members and students. Publications are the major assessment of research productivity.

Writing as a Career Skill

- Coursework that incorporates writing assignments is an important start.
- Trainees may have the opportunity to participate as a co-author before writing their own paper.
- The bulk of the training takes place when a paper needs to be written; “learning by doing”.
- The process of revision, as you work with a mentor and colleagues to perfect the paper, is critical.
- Responding to reviewer comments provides another level of training.
- Additional resources include presentations such as this one, as well as online resources from professional societies and writing centers available to academic trainees.

Tips for Manuscript Writing

The Beginning…

So, you, your collaborators, and/or your supervisor have decided it is time to write a manuscript.

Where do you start?

Strategizing

Step 1 in writing a manuscript:

Come up with a story.

Every Manuscript Tells a Story

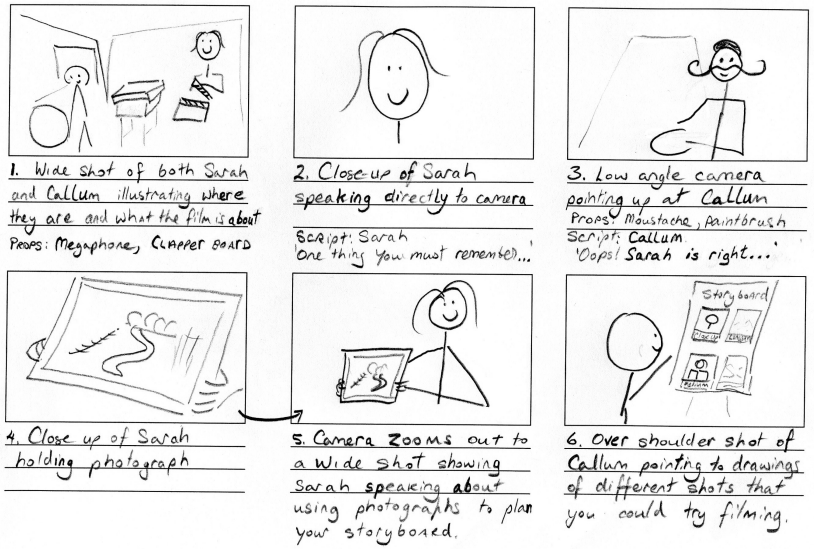
The goal is to make your story both readable and compelling, within the conventions of professional practice.

Assemble the Data

- One approach is to begin by assembling the data that you would potentially like to include. You can do this even before all of the experiments are completed or analyzed.
- It can be helpful to make a “storyboard”, printing out figures and tables and laying them out on a large table. Of course, you can do the same thing digitally, and there are apps available for this purpose.
- You, and your co-authors, can then shuffle the elements around until a logical order emerges.
- This exercise provides you with the basis for your story.

Example of a Storyboard

My Storyboard template
Planning the filming of the promotional film



Strategizing

Step 2 in writing a manuscript:

Choose a journal.

Choosing a Journal, Part I

The content of your manuscript MUST be consistent with what the journal is looking for.

- Read the journal's scope statement to see whether your work seems like a good fit.
- Look through issues of the journal to get an idea of the types of articles published, the types of data included, the depth of the content, etc.
- Some journals have a "pre-submission inquiry" option, in which you can ask the editors whether your paper is suitable, based on the abstract or other basic information.

There are usually several journals that might be appropriate for your paper; make a list of possibilities.

Choosing a Journal, Part II

Think about what you are trying to accomplish with your manuscript, and how soon you want it published. It generally takes at least a month to receive reviews, and then a month (or much more) to respond to them with a revision.

- Are you trying to have the paper published as quickly as possible? If so, you probably should not select a journal in the uppermost tier, where either rapid rejection or extensive revision is likely.
- Are you seeking a journal with the highest possible impact factor?
- Do you want to publish with open access? If so, you will need funds.
- Do you want to support a society journal rather than a commercial journals?
- If you are not in a rush, one strategy is to “shoot high” and try the more prestigious journal, with backup ideas if the paper is not accepted.

Choosing a Journal, Part III

Consider the editorial board:

- Are there only a few people with expertise in your area? If so, you should probably select a journal with those people on the editorial board.
- The same applies if you are seeking your friends as reviewers. However, there are no guarantees that your favorite reviewers will end up reviewing the paper.
- The people listed on the editorial board are not the only reviewers that may be recruited by the editor

Special issues and invitations:

- This can be a great opportunity, since you are assured that the topic “fits”.
- The editor will generally work with you to make sure that the paper is appropriate and will be published.

Strategizing

Step 3 in writing a manuscript:

Read the Instructions to Authors!!!

Instructions to Authors

It is best to read the instructions early, so you don't have to re-do your work later.

- Journal editors expend much effort to write the instructions.
- If the authors do not follow the instructions, it makes a bad first impression.
- Depending on the journal, the instructions can be quite extensive and may address issues that include:
    - Format of the manuscript and references.
    - Length of various sections of the manuscript.
    - Numbering of lines in the manuscript.
    - Conventions for use and presentation of statistics.
    - Issues related to reproducibility.
    - File format for submission of the text and the figures.

Consider the Sections of the Manuscript

- A manuscript is written in discrete sections…more to follow.
- Do not force yourself to ”start from the beginning”, which would be the abstract and introduction. The abstract may in fact be easiest to write at the end.
- If you are very technically oriented, you might prefer to start by writing the Methods section. This would help ensure that this section is carefully done.
- If you like diving into the literature, you might like to start with writing the Introduction. This will give you perspective on where the story is going.
- If you want to jump right in from your storyboard, you might start by writing the Results section. This can help you see ”holes” in the story that might require additional experiments.
- It is YOUR paper…begin with whatever section helps you to avoid or overcome ”writer’s block”. Switch to another section as needed.

Organization of a Manuscript, Part I

Abstract:

- extremely important, as it is the only part of the paper that many authors can access online
- must conform to specified word limits (typically 250 words), so it must be carefully written and self-explanatory
- typically includes introduction, rationale, hypothesis, experimental system, critical results, conclusion…all in one paragraph (for most journals)
- usually does not include experimental details or results of statistical analysis
- should include some details, such as species used

Organization of a Manuscript, Part II

Introduction:

- sets the stage for the rest of the manuscript; presents background allowing readers to understand why the study was done ("gaps in knowledge")
- typically includes the majority of the references cited in the paper
- important to cite major work from various authors…not just review articles…the reviewer may be one of these authors
- often ends with a hypothesis or statement of purpose; sometimes includes a brief summary of conclusions

Organization of a Manuscript, Part III

Methods:

- typically very boring to read, and thus relatively neglected, but critically important
- usually divided into sub-sections for each major method
- generally OK to re-use portions of text from another paper (from your own group); there are only so many ways to write methods
- difficult to proofread; errors are often found later when someone (maybe in your group) tries to repeat the work
- scrutinized by reviewers much more carefully in the past, due to concerns about scientific reproducibility

Organization of a Manuscript, Part IV

Results:

- presents results in a logical, step-by-step fashion…not necessarily in the order done in the lab
- usually ends with the most spectacular or important result
- each section should flow from the one before it
- typically, each section ends with a mini-conclusion for that set of experiments
- wording is critical; don't overstate the results!

Organization of a Manuscript, Part V

Discussion:

- puts the results into perspective, referring again to previous literature
- should not repeat all of the results
- advisable to mention limitations of the study, and areas where further work is needed…without casting doubt on the results
- often difficult for “beginners” because you are expected to draw upon your wisdom and think beyond the data
- can include some future directions if done carefully

Organization of a Manuscript, Part VI

Figures and figure legends:

- often not subject to careful proofreading, but very important
- title should ideally be neutral and not state the conclusion to be drawn; let the reader decide
- figures should be self-explanatory and have labels that explain what is happening; figure legends provide more details
- abbreviations used on figures can be explained in the legend
- also play a huge role in reproducibility; statistics, number of experiments, etc. should be included in the legend

Manuscript Submission

Make sure to allow plenty of time for the submission.

- Uploading all sections of the manuscript takes considerable time, and often involves intermediate checks on format and quality in the editorial platform as you go through the process.
- There are several major editorial platforms, but you may be surprised by a new platform that is unfamiliar and takes you some time to navigate.
- In particular, the procedure for submission of figures often varies between journals.

Responsible Conduct in Manuscript Writing

Authorship

- Taken much more seriously than it used to be
- In biomedical science, first author is usually the person who did most of the work and wrote most of the paper; last author is usually the senior person who oversaw the work
- Order of authorship is very important and should be the topic of discussion amongst the authors
- Many journals ask which authors contributed what to the paper
- If authorship is changed when a paper is revised, an explanation is usually required
- Most journals ask all authors to sign off that they are responsible for the content of the paper

Plagiarism

- Very easily detected in current times
- Journals subscribe to analysis platforms that look for even a few words that are repeated from another publication, and then provide access to that other publication for comparison
- Self-plagiarism can still be a copyright violation, and in any case is looked down upon by reviewers…except in the Methods section
- Plagiarism can potentially destroy the reputation of a scientist
- If the infraction is minor, authors may be asked to alter the wording to address the problem

Image Manipulation

- Very easy to do; almost all images are now prepared digitally
- Images are usually “manipulated” in that contrast, brightness, etc. are adjusted to optimize the image for publication; this only becomes a problem if the manipulation is done with the intent of changing the data
- As long as contrast/brightness are changed equally over the entire image, and important details are not lost, it is OK
- Publishers subscribe to analytics platforms that search for image manipulation in figures that are about to be published; authors must address any issues that come up

What are the Reviewers Looking For?

What are the Reviewers Looking For?

- The simplest answer is that reviewers and editors are looking for papers that will reflect positively on the journal, *and will be cited.*

- The impact factor of a journal is calculated based on the number of citations per paper.

Overall Impressions

The following considerations, if the answers are not positive, can be the basis for a rapid rejection.

- Is the paper well written?
- Does it tell a good story?
- Is the work interesting/novel/important?
- Is the premise/hypothesis clear?
- Is it the type of study that fits the scope of the journal?
- Does the data quality appear to be adequate?

Review Comments: Types of Observations

Different reviewers notice different things about a paper; thus the need for more than one reviewer.

- Novelty: has this been done before?
- Experimental approach: is it appropriate?
- Writing style: is the paper easy to read and understand?
- Reproducibility: is the approach described sufficiently?
- Data analysis: do the data support the conclusions?
- References: has appropriate literature been cited?
- Ethics: is human/animal use appropriate?
- Quality of the data: do you trust the results?

The Author as Reviewer

Don't pass up opportunities to serve as a manuscript reviewer, whether to help a colleague write a paper, to serve as a journal reviewer, or to serve on an editorial board.

The experience will help you to write better papers.

Thank you, and happy writing!

Feedback Survey

A link to the feedback survey has been sent to the email address you used to register.

Please get out your device, find that email, and spend a few moments completing that survey before you leave today.

Tip: If on a mobile device, shift view to landscape view (sideways) for better user experience.

Thank You!

Open for Questions