

The Lifecycle of a Scientific Paper

(a blunt but realistic introduction to the publication process for newly minted faculty, i.e. small fish)

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Summary for Discussion

- Writing
- Submit a Preprint and Advertise
- Submission for the Big Fish (not you, yet!)
- Submission to the First Journal for the Small Fish
- Waiting for Reviews from the Nth Journal
- You got Reviews back, and they Rejected the paper
- Reviewer Responses
- Acceptance, Publication, and more Advertising

Writing

(after the science is completed, sort of)

- You are likely a decent writer. Your students and postdocs will not be. You must decide: Write it yourself or spend the time to help them learn? Unlike your past work, you don't know everything that they did. Read carefully!
- You probably aren't as good a writer as you think. Have a senior colleague read a draft. Have multiple colleagues read your title and abstract. These must hit the mark and convince an editor to send your paper out for review.
- Authorship issues can be hard to solve and real feelings can get hurt. Try to solve these early in the process, but of course you can not foresee where a project will end up. When in doubt: be generous (authorship contributions are mostly all positive in sign), consult a senior colleague for advice.
- Have a journal in mind but be flexible when writing. The process itself can take you in unknown directions.
- Acknowledge every possible grant/award that funded any aspect of the project. All the grant writers get credit when it comes to renewals etc. Everyone wins.

Submit a Preprint and Advertise

(why wait for the lengthy publication process?)

- You are a small fish, it is going to take a while to get your first papers published. If you keep things secret until publication:
 - No one will know about your work
 - You won't get credit for it in the moment
 - Someone might "scoop" you (although this is unlikely)
- Uploading to a preprint server (arxiv, biorxiv, medrxiv) gets your work out in a way that can be cited. Put these on your CV.
- Tweet (with a graphic/video) and get others to re-tweet. You can get tens of thousands of eyes on a snazzy paper in 24 hours.

Submission for the Big Fish

(not you, yet!)

- Chances are you did your PhD/postdoc with a famous senior investigator, “Fancy Prof”.
- Journals get many more more articles than they can actually review. Editors have to triage.
- When Fancy Prof sends a paper to a journal, the editor knows their name and they send it out for review. Based on Fancy Prof’s track record they are predisposed to think the paper represents good work.
- The reviewers also know Fancy Prof. They do a serious job reviewing, but are willing to give Fancy Prof the benefit of the doubt on some things.

Submission to the First Journal

(for the small fish)

- Presubmission Inquiries are a waste of time.
- Your cover letter must clearly and concisely point out what is exciting and novel. Don’t hold back. Unlike for Fancy Prof, the editor needs an extra push to send your paper for review. Use forceful, direct language.
- Get to know the editors of key journals. They often attend meetings etc.
- The editor will look at the references in the introduction when deciding who to ask as a reviewer.
- If you shoot high, and don’t know the editor, chances are they will desk reject your paper in 24-48 hours. You can argue, but at this point you know that the editor is not naturally positive about the work. It will only be an uphill battle from there. Move on.

Waiting for Reviews

(after the Nth journal finally sent it out)

- Congrats, your first paper as a PI went out for review. Relax and enjoy the feeling.
- Unlike your previous academic life, you should have other projects moving with other trainees. Move your focus over to them and forget about the paper in submission. Reviews take forever.
- The students who submitted the paper will feel a lull. They just wrapped up a huge focused project and may not know what to do next. Get them moving on the Next Big Thing.

You got Reviews back

(and they rejected the paper)

- For 99.999999999% of papers, there are some negative aspects to the reviews. This is especially true when you are the small fish. Because the editor can only accept a small percentage of the papers that get reviewed, they will then reject your paper.
- Rejection sucks, but it happens a lot in academia with grants and papers. Get used to it but don't take it personally (this is hard!). It is a game and you can learn to win.
- Make sure your trainees understand that this is part of the process. Their paper is probably even more personal to them than to you and reject hurts.

When you are Rejected...

Problems worthy of attack prove their worth by fighting back. -Hein

- Brush off the rejection and write the editor. Intelligently explain why Reviewer #3 was wrong/biased/insane and ask for a chance to resubmit. There are two possible outcomes here:
 1. They say no. In this case the editor is not on your side and you should move on. Anything else is an uphill battle.
 2. They say yes. This means that the editor is (at least in part) with you. At this point ask to have an actual conversation with the editor and see if you can get them to agree that Reviewer #3 is being unreasonable (asking you to invent a whole field, e.g., or prove the unprovable). Then submit the very best revision you can. It will still go to the same reviewers, including #3, but you now have some leverage against them.

Reviewer Responses

Truth springs from argument amongst friends. -Hume

- Be polite. Thank the editor and reviewers for their comments. Even if you are going to argue with them, show them you value the input.
- Argue less and massage more. Every reviewer wants to feel like they sculpted parts of the paper. Use this to your advantage in the revision.
- Address every reviewer point no matter how small or dumb.
- Be specific about what you edited. Rather than “Done”, write “We have added a sentence to better describe this on page XX of the revised manuscript,” and then include the new sentence in the response.
- Make the response easy to read by using color/type/indentation to separate the reviews from the responses.

You're Accepted!

(after multiple rounds of review and hardship)

- Take the win. Yes, the reviewers were unfair and they dragged your group through the mud. You suffered emotional rejection and were made to do a bunch of unnecessary work. But now you are *in press*. That is what matters and what goes on your CV.
- I don't think journals really ask if you want to buy official reprints anymore, but if they do chuckle and delete the email. I have similar feelings about cover art which seems very outdated.
- Read the proofs carefully. The underpaid, non-scientist copy editors always make mistakes in technical sections where small details matter. Screw commas, an extra subscript somewhere can turn an inert compound into something dangerous!

Now you're Published

(but who is going to read it?)

- Make sure the PU/Dean of Research/Your Department press offices knows about the upcoming publication and try to get them to write a press release.
- Tweet/broadcast again when the paper is published.
- Update the preprint record to reflect the publication.
- Upload the PDF as appropriate for your funding agency (e.g NIH).
- Host the PDF/link on your website (your group needs a great website!) in a format that is not behind a firewall.