

GUIDES TO UNDERTAKING RESEARCH

6.3 Collaborating on Writing Manuscripts

Journal publications are the major avenue for communicating scientific evidence and ideas, and they demonstrate the authors' contributions to the scientific *corpus*. Publication metrics are thus commonly used as productivity indicators in grants, awards and job interviews, albeit rather crude indicators. To develop and publish new manuscripts, collaboration with other researchers is often needed. Such collaborations must be managed well if a task is not to become a quagmire of floundering conflict and confusion. There are thus a number of important points to consider about collaborative work.

First stage of manuscript development: shaping the idea and getting the data

When starting out with an idea for a manuscript, working with collaborators (including close colleagues) is useful for reviewing and discussing the literature, and to assess how to extend any dataset. The list of manuscript co-authors naturally becomes evident from their participation in this process, since it is crucial to acknowledge significant contributors. It is then necessary to decide who should be first (or joint first) authors and senior authors and make sure that this is acceptable to all.

Authorship status

First authors are the main drivers of the project and manuscript writing, while last authors are those with senior status overseeing the project.

Clarity about each author status and contribution is important but there are pitfalls. Sometimes at a later stage the contribution one author may increase to the point they are justified to be first author, and it may then be necessary (but hard) to go back on undertakings to the originally designated first author. This must be handled sensitively; designation as joint first (or joint senior) authorship can be a good solution.

Second stage of manuscript development: presenting the work and preparing figures

Data analyses will need to be assembled in figures and text in order to present at oral and poster presentations. These presentations are great preparation for publishing, so the narrative structure of the work can be tested and to critical feedback on soundness of the data obtained.

Other good feedback will come from collaborators who can now see the project taking form, so a copy of any poster or slides should be sent to them with enough time before a presentation to allow them to comment. It is also a courtesy, as it demonstrates they are involved and that their input is appreciated. Bear in mind that authorship lists on conference presentations will create expectations for author inclusions (and order of the author list) in the related manuscript.

Drafting a manuscript

It is usual that text and figures are worked on by one or two authors with critical reading by other authors. Version control is crucial, as without it there can develop a confusion of parallel draft alterations, plus the nasty risk of contributors amending out-of-date drafts which will annoy them. For early drafts, e-mailing (MS Word) copies of drafts for co-authors to make tracked changes is

good, but there are also good online options such as Google Docs or Overleaf.com that allow simultaneous editing. It is best not to perform major surgery on a draft while others are busily working on it. Note that among manuscript development issues, a thorny one can be deciding which points should be put in the Introduction and which in the Discussion section; if in doubt put it in the Discussion to avoid the Introduction being overly long.

Authorship etiquette in manuscript writing

It should go without saying that the main manuscript author should treat other co-authors with proper consideration. This includes clarity over their roles, and treating their edits and amendments seriously. Requests for input from other authors should give them time to respond before deadlines; an unexpected request sent late on Friday for an early Monday morning deadline is not respectful. It is also important to actively acknowledge the contributions of particular authors that have put in effort.

It is usually difficult for inexperienced writers to accept criticism without being defensive. After working long and hard the new writer gets emotionally attached to their creation. Experienced writers know a near-Buddhist lack of attachment is best. There is also the Dunning-Kruger Effect which, paraphrased for the context, is that inexperienced writers have yet to learn enough about writing to understand just how awful their scientific prose really is. A trusted mentor, or a senior colleague whose irate opinions cannot be ignored are good ways to fix this problem if it arises.

Plagiarising text

A major point to remember is that plagiarising others is always bad, unacceptable and easily detectable and, hence, always embarrassing. However, it may be reasonable to take a short piece of text by a good writer to recast and refashion in your own words.

Permission

With manuscript done, always get permission from all authors before journal submission. Failing to do this really is a cardinal sin. Usually a first or last author is designated 'Corresponding' author(s) and this author is responsible for journal contact tasks; note that in some circles, being corresponding author carries extra status.

Research ethics and collaborators

This is a huge subject, summarised thus: be honest, be open, be scrupulous and always do things in good faith. Do not cut corners on this. Make sure data and data analysis is correct and get it checked by others. If you suspect the ethics of a co-author or data supplied by them, seek mentor advice before the problem snowballs. If something is wrong do not delay to deal with it. Make certain of ethics committee approval for the work has been obtained before any study is undertaken – ethics approval numbers will be needed for journal submission, and it may not be approved retrospectively.

Third stage of manuscript preparation: finalising the manuscript

Once structure, narrative and data is done at last, finalising it all in a publishable draft can be surprisingly long-winded. Almost everyone (even those most experienced) underestimate this, sometimes hugely. This is due to the need to inspect the work from every angle, and it is common to find major data issues only with writing underway, e.g., a vital control group not included, or a minor section that has become major starts to wilt under the increased scrutiny. Get co-authors to help with this process, as that extra brainpower is needed to spot problems before peer-reviewers do.

Do not submit a manuscript without appropriate collaborator input, thinking that the journal reviewers will provide all the appropriate suggestions to get the manuscript past; that approach never ends well. Read, read and read again the manuscript and do not be afraid to make

changes even in the most important bits of the text if it make the writing clear and concise. Be brave and delete words or paragraphs that do not seem to add value.

Fourth stage of manuscript preparation: the fiddly bits at the end

So many fine details and minor features (including formatting for journals) need to be finalised for journal submission that it takes far more time than seems reasonable. This process is not hard at all but here, alas, the first author is usually on his or her own.

The peer review process

This is not an easy process to navigate. Drafting a response to peer reviews is a delicate diplomatic and strategic exercise, so co-author help is really essential. It is essential get co-author input and approval before a response to the peer review is submitted.

In general take peer review criticism well and courteously. Provide any further data that is requested or provide good reasons why not, for example, if it would give uninterpretable results or it lies outside the scope of the study.

It is generally understood that a journal editor will accept the manuscript if the authors properly respond to the points raised by the reviewers. A second review by the same reviewers performed, and it is a convention to help preserve everyone's sanity that the second (i.e., last) review will not raise substantive issues the first did not, as it allows no possibility for response. This is not always true of the highest journals, however, as they do as they see fit because they can.

Money

Do not forget most journals charge publication fees, so make sure the appropriate funds are secured before submission.

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