Scientific Paper Step 3: Full Outline

Congratulations on finishing step 2! In this step you will create the outline that will develop into your final paper.

You should start step 3 when you already have **most** (but not necessarily all) of your main key data and results completed. This is because in step 3 you are going to begin outlining the text of the paper, and you need to have some certainty about the results first.

In step 3 you will:

- lay out ALL the exact sections of your paper, forming an outline. This includes acknowledgements, data availability, and supplementary sections
- figure out what you plan to say in each section and the order in which you will say them. As in the previous step, the order does not need to be order in which you did the study.
- create one bullet point for each paragraph that will eventually be in the paper, with the bullet providing notes on what to eventually say and cite
- include the most updated versions of your figures
- think about parallelizing the next step with co-authors

Step 3 usually takes a little bit longer than Step 2, but can usually be completed in within a few days. If it takes much longer than that, it's a sign that Step 3 is premature.

When answering the questions in this form, use plain, conversational language - short, simple sentences are preferred!

More information: https://github.com/computron/scientific-paper-flow

* Indicates required question

1.

Email *

Tips for Step 3
As in the previous step, your goal should be to keep the momentum going. This means:

- Do not worry about writing the "real" text (our goal is bullet points)

- Do not enter formatted citations (this is time-consuming)
- Do not fine-tune any figures (these often change later in the process)

Remember, you don't want perfectionism at this stage, just to keep momentum. This stage is like an outline for an art project or a storyboard for a movie. Work in broad strokes. If you are looking for perfectionism, try to perfect the outline - things like balance, order, selection of what goes in the main paper versus the supporting information, etc. If you do this part well, refining the paper in the next step will be easier - so use your perfectionism towards getting the perfect outline.

If you are having trouble filling in bullet points, re-think the order in which you complete bullets. It is usually easiest if you add the bullet points for the methods section first as this will be the easiest to outline. Next will usually be the results section since you can outline your thoughts around each figure. Last will usually be the introduction and discussion - these can be difficult since they can require a lot of literature review.

2.

Attach your paper outline. Instructions for preparing the outline are below.

1. Put the title and authors of the paper at the top of the document.

2. List all the section headings to be used in the paper (including Abstract, Conclusion, etc.). These headings should follow your proposed journal's guidelines. You do not need to fill in these headings yet, just list them. Repeat this for subsection headings. This will form an outline for your paper. If you are unsure of what headings to put, just look up other / similar papers in the journal you plan to submit to. You may need to look at a few articles, and also make sure to look at the same article type as the one you are targeting.

2. Place all existing figures and tables in the appropriate sections / subsections. Figure captions should describe what the figure/table is about as well as the message of the figure. If the figures require updating in the future (e.g. to the underlying data or to the presentation), indicate this as comments in your caption.

3. Within each heading and subheading, include **a single bullet point for each paragraph-level idea** in that heading. For example, the Introduction may have several bullet points that each list some of the prior work in a particular topic and together the bullet points outline the flow of the Introduction. The Results section may have bullet points that each explains a certain figure, and Methods may have bullet points that

describes each simulation or ML method. The bullets do not need to be detailed at this point (e.g., one-sentence bullet per paragraph is fine), but they need to be informative enough that someone should see the flow of the work. You can also have the bullet points be longer or contain sub-bullets, containing short notes / very rough writing to help you remember the things you will eventually polish into text, and contain notes on potential citations to add. However, do not spend time writing polished text or inserting formatted citations at this point!

Note: each paragraph in a finished paper is usually ~150 words. A paper is normally 3500 - 6000 words. It is typical you have between 25 - 40 top level bullets, one for each paragraph.

Note that it is OK if the paper feels "light" in terms of text at this stage, or if it feels "messy" with lots of notes of things to talk about. The notes can be polished into elegant text and elaborated upon later. The more important thing is to have the figures and overall structure in a good place, and to have ideas about what you will eventually talk about.
*

Files submitted:

3.

What conclusions remain uncertain at this stage, and how long before finalizing results?
For example, you may be waiting for data to decide if a particular hypothesis is correct or not. For estimating how long, indicate potential delays that might occur, such as computers or equipment going down, a proposed methodological update not working, etc.

[max: 2000 characters]

4.

List ways in which collaborators of the paper may assist with unfinished items.

Here's an important tip - if you have co-authors, this is a great place to parallelize the writing of the paper. If your outline is good and your co-authors are knowledgeable, it should be straightforward for them to convert their portion of the outline to text and citations. You'll be even more successful if you give them a word count to aim for as well as targets for number of references or figures for their subsection.

[max: 1000 characters]
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