DEAR LABBY

I am a fifth-year graduate student and am excited about writing my first paper describing amazing results collected over the last three years. I want this to be MY paper, but I really don’t know how this works because the process has never been discussed in our lab meetings or in the graduate program. What part of the writing do I do? What part does my advisor write? Who writes the first draft? What’s the order of authors? Who is an author? How do I get started and do I write the sections in the order that they appear in journal articles? Should I be thinking of which journal I want to submit my paper to as I construct it? And those are just my first questions!

I would greatly appreciate advice from Labby on all this and whatever else is critical for me as I embark on my first paper.

—Eager but Naive

DEAR EAGER BUT NAIVE: Labby senses the enthusiasm for your work and excitement about sharing it with the world! But your frustration with the lack of clarity in the writing process is understandable. Over the years, Labby has developed the inclusive approach to writing papers that is described below. Maybe sharing this with your advisor will inspire him or her to adopt a similar approach!

Labby always asks students to assemble the first draft. Although it may take many cycles until the final version is assembled, it is a learning process that is invaluable to the students and generally results in a better product and higher likelihood of acceptance.

Before thinking about assembling the first draft of a paper, Labby makes sure everyone is on the same page about authorship and which journal to submit to. Journals do have “styles,” so it is good to make sure everyone is aware of the instructions to authors. Labby then outlines the strategy for assembling the paper, which includes discussing the content and layout of figures. The writing strategy is critical: First, one needs to clearly define the message by developing a possible title that succinctly, completely, and accurately conveys the advance being reported. Next, the Abstract should be written to expand on the title by concisely laying out the background, what was done, and what conclusions can be drawn. Having established these perspectives, you are ready to write the Results section. Interpretations of results should be left to the Discussion, unless they are necessary to explain the next experiment. Labby asks the students who did the

Got Questions?

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experiments to make careful and well-organized figures, accompanied by text that accurately conveys the rationale and findings of the scientific adventure. Assembling the results and figures can raise new experimental questions, so there is often a pause in assembling the rest of the manuscript.

With the potential title, Abstract, and Results section in hand, it is time to think how best to assemble the Introduction and Discussion. Following the perspectives from the title and Abstract, these two sections go hand-in-hand. The Introduction should present the necessary background—in a concise manner, giving appropriate credit where it is due—to prepare the reader for the Results and Discussion. The Discussion should interpret the results—and not repeat them—in light of the points made in the Introduction. The easiest way to do this is by assembling a list of bullet points for the Introduction and Discussion, and then expanding them into prose. The Materials and Methods section is added, as well as any other sections, and the first draft is complete!

It is important to step back and rethink if the flow of the paper is optimal, or if it needs to be reorganized. Labby has found that many manuscripts benefit from significant reorganization at this point. When the student is happy with the draft of the manuscript, Labby then edits it to ensure that it is clear, says exactly—not less or more than—what is appropriate, that the conclusions are warranted and complete, and that the statistical analyses are appropriate. The paper now goes through cycles of adjustments, with input from other scientists, to get to the final version. During this process, all sections, including the title and abstract, may also evolve as the biological implications of the study emerge more clearly. How do you know when you are there? You keep improving it until the study “sings,” meaning that it is easy to read and flows from Introduction, to Results, to Discussion like a gentle river.

So why not short-cut the process and let the advisor write all the major sections? After all, he or she is the professional scientist experienced in writing. How would students ever learn to write a paper if this were the process? Learning to construct a well-written paper is an art, and that art should be handed down from advisor to student. Moreover, the experiments should be written up by the person who performed them, as only he or she knows exactly how they were done.

So good luck, my friend. Labby hopes that you are successful in persuading your advisor of the wisdom of asking you to write the first draft.

Happy writing!

—Labby

The Newsletter Welcomes Letters to the Editor

Have thoughts you’d like to share with your colleagues? We’d be happy to consider your Letter to the Editor for publication in the ASCB Newsletter. Write to the Editor at mleader@ascb.org.