

How to Submit a Research Paper to a Journal

In the later stages of your doctoral studies in Mathematics, one of the important things you will need to do is to submit one or more papers to research journals for possible publication. You should do this as soon as your dissertation adviser tells you that your research is ready for publication, but not before! If you are co-authoring a paper with your adviser, then he or she may be handling the submission details as the senior co-author. If so, ask your adviser to use the submission process to teach you how it is done, so you will be able to do this yourself in the future. However, if you are submitting a paper as the sole or senior author, then you will need know how to handle this process yourself. Over the years, there have been advanced graduate students who could have benefited from some general advice about the submission process. This letter has been written in the hope that you will navigate the publication process smoothly.

Remember that any papers based on your dissertation research should *include a grateful acknowledgment* - either in the introductory section, as a footnote, or at the end. State that this work is part of your doctoral dissertation at Louisiana State University and thank your adviser. Your acknowledgment of the role of your doctoral adviser may help to insure that a journal editor takes your work seriously, since it has at least passed the scrutiny of your adviser. If other mathematicians have helped, thank them too. Most mathematicians are generous about sharing their ideas, but they will surely notice and remember if you fail to acknowledge them. This is good advice to remember for the future as well.

You should give careful thought to your paper's introduction. The introduction to your paper should explain clearly what your main results are and why they are interesting or important. The introduction should tell your audience how your mathematical work is related to recent research in the area. It is very important to properly reference these works. A referee for your paper may be chosen from among the researchers whose work you cite. You would like the introduction to motivate readers to read more. Read the introductions from leading researchers in your area to give you ideas about what you should include in your introduction.

Ask your adviser read your entire paper and *listen carefully to his or her suggestions*. It takes much experience to know how to write well for a research journal. It is likely that you will need to go through several thorough revisions before your adviser is pleased with your writing. Expect this to happen and learn from the process. It will benefit you for years to come.

It is important that your paper be sent to referees with current expertise in the field of your research. With this in mind, the first thing to do is to ask your adviser to suggest a suitable journal and a suitable editor to whom to send your paper. Your adviser may know that a certain journal is an active venue for publication in your field. Before you and your adviser make a final choice of the journal to which you will submit your paper, you may be well-advised to check the backlog of the journals that you are considering. Especially during the early years of your career, you may have a practical need to get several papers into print without very long delays. *Backlog information* is often available at the journals' websites, as explained below. Another useful type of information which is available is the *Mathematics Citation Quotient* (the ratio of the number citations to the number of papers in a given journal) which is available on [MathSciNet](#) through any LSU campus computer, or from home through PAWS and the LSU Library resources. For instance, in 2004 the MCQ of Transactions of the AMS is listed at a bit more than 0.6, whereas for the Journal of the AMS it is above 2. Another citation index is available through the LSU Library. From the LSU Libraries Indexes and Databases page, which is available through your PAWS account even from home, select *Web of Knowledge* in the *Frequently Used Databases* menu. Then select *Journal Citation Reports* from the menu at the top of the ISI Web of Knowledge page.

Many journals have websites, which you should visit to read their instructions for authors. For example the AMS Journals use this page: [Information for Authors](#). Here is a link to a page for Transactions of the American Mathematical Society: [Submissions to Transactions](#). You will note

that some editors favor electronic submission, some favor paper, and some want both. You will probably find a list of members of the journal's editorial board, as one finds at [List of Transactions Editors](#) for example. Be sure to discuss with your adviser which editor would be the best one to receive your submission. You may also find a page listing style files for that journal which you can download: [Authors Package for Transactions](#). You will see also a link for the [Backlog Information for Transactions of the AMS](#). Other journals provide similar information. For example, here is a link for the [Backlog Information for the Journal of the AMS](#). A number of mathematics journals accept submission of articles from listings which authors can place at the [Mathematics arXiv](#). Once you have selected a journal, check the requirements for publication in that journal, with regard to style, type and length of papers published, etc, to make sure you get these things right.

When you send your paper, you will include a brief cover-letter to the editor. Make sure you know how to write a formal, polite letter. You should ask your adviser for suggestions about this letter and also to review what you have written in the letter before sending it. Your letter should state that you are submitting a paper to Journal X based on the research which is or will be part of your doctoral dissertation in mathematics at LSU. If it is in an accepted dissertation, say so. State that your adviser, whom you name, has recommended submission to Journal X and to this particular editor. Some authors include a sentence to describe briefly the specialized topic of the submitted paper. For example: *This paper is an application of the representation theory of unipotent algebraic groups to a problem in spectral geometry.* Each editor will have either a mental or a written list of experts in many specialties. Your description, together with the title, abstract, introduction, and bibliography of your paper can help the editor to select a suitable referee from his list.

If you have already received your doctorate and are submitting from your first job away from LSU, be sure to write on the correct letterhead stationery of your new institution. Failure to do this became a problem for a PhD graduate of this department years ago. This graduate had earned a prestigious postdoctoral research job at a Group-1 Math Department (the highest group in the AMS classification of university mathematics departments). Yet this very talented graduate wrote a letter of submission without any of the information mentioned in the preceding paragraphs. The letter was written on a plain sheet of white paper, with no mention of holding a PhD or any job in mathematics! The paper was summarily rejected without being sent to a referee.

We would all like to believe that every idea will be judged fairly on its own merit. But the fact is that editors and referees are busy people. Editors don't want to bother their referees by asking them to waste time reading junk. And people do sometimes make quick judgments based on appearances, even if that is not the right thing to do. So this graduate was given the name of another suitable editor for the same journal, and was advised to write the letter on the letterhead stationery of the Group-1 math department for which the graduate worked, and to sign with the title of the named postdoctoral research job held. We won't divulge the name the graduate involved, but the second letter was signed in this format: "Dr. Alpha B. Gamma, Coveted Assistant Professor, Famous University." With this second submission, the paper was accepted by the same prestigious research journal which had rejected the same paper shortly before. No revisions had taken place.

It is reasonable for a period of about 6 months to be required for the refereeing to be completed. If the time goes much longer than this, it would be appropriate to send a respectful note to the Editor to ask whether any feedback had arrived from the referee. The Editor will likely send a reminder to the referee, who may have set the paper aside for a few weeks, perhaps forgetting about it entirely because of the passage of time.

There are many kinds of feedback which you may eventually receive. The referee may have questions about the mathematics in its details, and these will need to be answered clearly, perhaps through revisions of the submission. You may be asked to make certain types of revisions and then re-submit either to the same journal or to another one which could be more suitable. It is important not to become discouraged if you need to make revisions or to submit to

another journal. This does not necessarily mean you have written a poor paper. Your paper may be excellent even if it is rejected outright. Here is an example from the 1930s.

Prof. Eugene Wigner, the Nobel Prize winning physicist, used to spend many winters during his lengthy retirement from Princeton visiting his former students at LSU. Because Prof. Wigner enjoyed mathematics, he often spent time at the Math Department, conversing with mathematics faculty members. When Wigner was young he had written a paper called *On the unitary representations of the inhomogeneous Lorentz group*. He had submitted it to *Transactions of the American Mathematical Society*, which rejected it as being *of insufficiently general interest*. Wigner discussed this with his friend, John von Neumann, who suggested submitting the paper to him for *Annals of Mathematics*, of which von Neumann was an editor. *Annals* published it, and many years later Wigner received a letter from the AMS. It said that the Society had conducted a study to identify the most-cited research papers in twentieth century mathematics, and Wigner's paper mentioned above was one of these.

You will receive much advice during your career as a mathematician giving you good reasons to publish your research. You will decide for yourself what to do and why you do it. But here is a good reason which is sometimes overlooked. If you have discovered something which you find interesting, when you publish it you are sharing it with others. That is a good thing to do, for the same reason it is good to teach mathematics. Publishing your research is an especially personal kind of sharing, because it is your own contribution. And when you find that another mathematician shares your interest, this will be very satisfying for you.