

## PHYS 395 Research Methods - Lecture 5

# Publication process in a scientific journal

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## Main stages of the process

- Actual research
- Identification of the journal
- Preparation of manuscript
- Submission
- Editorial and peer review
- Changes and modifications (based on response of referees)
- Acceptance and publication

## Identification of the right outlet

- Good to have a vision for where the work should be published *before* you start writing a manuscript
- There should be a consensus among the coauthors
- Senior and more experienced colleagues will probably have a clear idea where the manuscript should go
- Authors should ensure their work reaches target audience (and as much of it as possible)
- Elsevier has a tool that can help finding an appropriate subject journal - [Journal Finder](#)

## Identification of the right outlet

- Read the aims, scope, editorial policies, and author guidelines of your target journal to avoid surprises
- Make sure you understand the access model of the journal. Some journals may not be accessible for many prospective readers of your work. Other journals may require a high publication fee.
- Have an estimate of the length of the process. It can vary from days to years depending on the journal and how fortunate you are. Typically it takes a couple of months to have your work published after you first submit it.

## Preparation of manuscript

- There may be a word limit in some journals (or for specific types of articles)
- Formatting requirements for data, figures, and supplementary information must be met
- Principles of scientific writing should be followed
- Second opinion from colleagues could be useful
- Some journals require a graphical abstract
- Good proofreading is a must (in some cases professional copy-editing services could be used)
- A good fraction of of articles submitted to reputable journals is rejected before peer review. The top reasons are:
  - Work being out of scope of the journal
  - Poor language.

# Typesetting

- Most journals nowadays accept manuscripts prepared in MS Word and LaTeX
- Some may accept handwritten manuscripts
- Some may accept manuscript in PDF (without source)
- For physics (especially theoretical physics) and math journals LaTeX has been a standard for manuscript preparation for some time

# Submission

- Letter to the Editor
- Uploading the manuscript, acknowledgement of originality, copyright transfer forms (if any)
- Some journals may ask for the names of experts who could judge about the work submitted

## Peer review

If the editor finds that the manuscript meets basic criteria (scope, value, proper format) he/she sends it out for review to independent peer reviewer(s). There exist several peer review formats:

- Open review
- Single-blind (most common)
- Double-blind



## Who are the reviewers?

- People working in the same field - academics (university professors, postdocs) and scientists at research laboratories
- Reviewers usually have a good publication record on their own and understand the publication process well

## Referee reports

- Reviewer(s) provide feedback, criticism, and make recommendation about acceptance
- The decisions could be, e.g.
  - Accept as is (rare)
  - Accept with minor changes
  - Request major changes (subject to further review by the same or other referees)
  - Reject or recommend publishing elsewhere

In the case of negative decision the authors can appeal to the editor.

## Acceptance/rejection

- Based on referees' response the editor makes a decision
- In the case of a negative decision the authors can appeal to the editor
- Most often the manuscript is not accepted immediately. The authors are asked to make changes and resubmit for the next round of review. It could take several iterations to have manuscript accepted.
- Addressing referees' criticism is a very important (and often overlooked/undervalued) element that greatly improves the quality of science

## Post-review copy-editing

- After acceptance the manuscript is forwarded for production
- The production unit/organization may do some copy-editing. This, however, does not aim to change the intellectual content.
- There may be additional (mostly cosmetic) changes requested by the production team.

## Publication fees, online access, and print

- Some journals request a production or publication fee (details vary depending on the journal funding/access model)
- Some journals may have a list of recently accepted (and not yet published) papers on their website
- Some journals may publish a pre-production version of the paper before a fully copy-edited version appears

## Motivational aspect

**Having a paper published is of great motivational value, especially for junior researchers**