The image shows a spiral-bound notebook with a light brown, textured cover. The spiral binding is on the left side. The text is centered on the cover.

Scientific papers, their publishing and presentations

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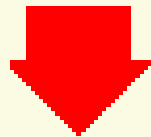
jarma@ikp.liu.se

Introduction

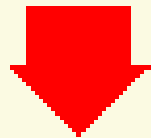
- 📄 A naturalist's life would be happy one if he had only to observe and never to write (Charles Darwin)
- 📄 In science, no matter how spectacular the results are, the work is not completed until the results are published.
- 📄 The purpose of this presentation is to help students to prepare the manuscript and to show all steps from the rough manuscript to published paper.

Contents

From an idea



by help of rules



to the published paper



- 📄 kinds of scientific written communication
- 📄 scientific writing in general
- 📄 IMRAD format
- 📄 paper organization
- 📄 paper writing
- 📄 paper submission
- 📄 the editing process
- 📄 proof-reading
- 📄 ... and pointers to reading

Scientific written communication

 Reports


 Theses or dissertations

 Journal articles

 Slide presentations


 Posters

 Books and book chapters

 Technical manuals/users guides

 Research or grant proposals

Scientific writing in general

 Subject

 Purpose

- to exchange the scientific knowledge
- to ask and answer specific questions

 Audience

- scientists and those interested in the subject
- a publisher or an editor

IMRAD format

📄 Introduction

📄 Methods

📄 Results And

📄 Discussion

📄 What problem was studied? What others and you did?

📄 How do you did it?

📄 What you found out?

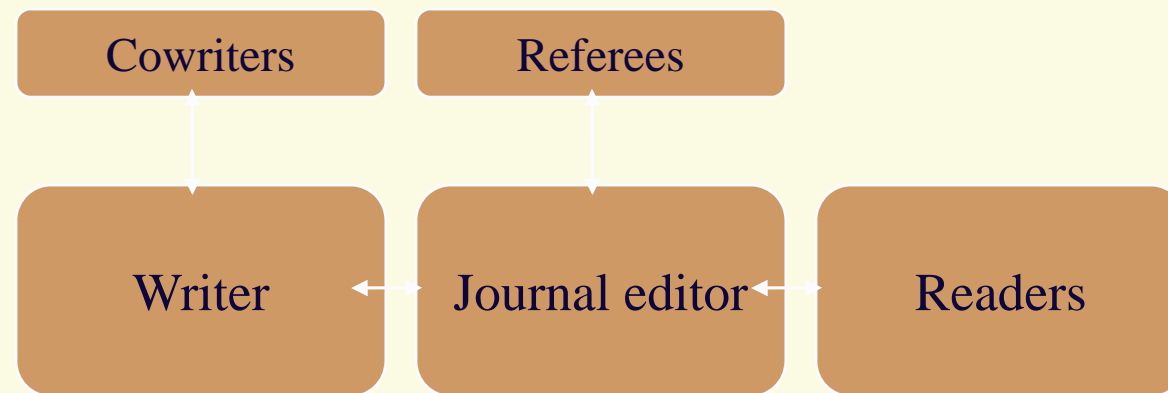
📄 What your findings mean?... and future plans

Remember: writing helps you to think and to learn. Don't misjudge your audience. They can tell you when you are bluffing and when you don't believe what are you saying or doing. Write clear and simple, the science is not an entertainment.

Other types of journal papers

- ☞ State-of-the-art
- ☞ Review
- ☞ Bibliography
- ☞ Technical notes
- ☞ Letter to the editor

Steps in scientific journal writing



Paper organization

Introduction

- call attention to the specific subject, define the problem
- provide background and present the results of other studies (literature review)
- list the structure of your research project and what you plan to present in your paper

Reading a scientific article isn't the same as reading a detective story. We want to know from the start that the butler did it (Ratnoff, 1981)

Paper organization

Methods

- complete information of materials and methods used, conditions present, actions, experimental design, etc.
- this section usually has subheadings; when possible match those to be used in Results
- enough information must be given so that the experiments could be reproduced
- ask a colleague if he/she can follow the methodology

Paper organization

Results

- display of data with logical development showing how your findings satisfy your objectives
- where possible give illustrative examples and compare those with known results from literature
- use tables and figures
- "the fool collects facts; the wise man selects them" (J. W. Powell, 1888)

Paper organization

Discussion

- the hardest section to write, you discuss, you do not recapitulate the Results
- show the relationship among observed facts
- state your conclusion as clearly as possible
- summarize your evidence for each conclusion
- end with a short summary/conclusion regarding the significance of your work

Searching scientific literature

Explore ideas to your subject

- gaps in research on a subject of interest
- existence of any duplication to your work

Conduct a specific search

- manually in the library
- on-line searching

Keep up-to-date with the specific subject

Literature review

Developing an outline

- chronological arrangement
- comparison and contrast in contraversional theories

Creating a skeleton

- select a few documents and write about each
- discern the main points of their contents

A rough draft is ready but



- ☞ Will you have co-authors?
- ☞ Which journal to submit your manuscript?
- ☞ How soon will it be published?
- ☞ How to deal with editors?

Journals - Publishers

Professional societies

AIAA

ASCE

ASME

IEEE

SIAM

Professional publishers

Elsevier

Pergamon Press

Springer Verlag

J Wiley & Sons

Kluwer Academic
Publishing

MCB University Press

IOP Publishing

Academic Press

Where to submit the manuscript

- 📄 The prestige factor
- 📄 The circulation factor
- 📄 The frequency factor
- 📄 The audience factor

Journal Citation Reports

 jcrweb.com

Information for New Users

Welcome to the Journal Citation Reports on the Web (JCR Web). JCR Web provides easy access to data that helps you evaluate and compare scholarly journals. Please read the overview sections (see the Table of Contents on the left) for information about what the JCR is and how it can be used.

Refer to the JCR Home Page help for information on selecting a database and a query option.

The JCR Web, like the JCR on CD product, is an essential, comprehensive, and unique resource tool for journal evaluation, using citation data drawn from over 8,400 journals from over 3,000 publishers worldwide.

The JCR is the *only* source of citation data on journals, and includes virtually all specialties in the areas of science, technology, and social sciences. The JCR can show you the:

- highest impact journals
- most frequently used journals
- hottest journals
- largest journals

Please refer to the Using the JCR to Find... section in the Table of Contents on the left for a list of tasks you can perform using JCR Web.

Please refer to the JCR Web Pages section of the Table of Contents on the left for a list and a flowchart of the web pages at this site.

Note: JCR Web is best viewed at a display resolution of 800 x 600 or higher.

Documentation version 1.0

Paper writing

- Write a rough abstract first or start text in the middle
- A rough draft is ready
- Select the journal and read Instructions to Authors (manuscript requirements: style in headings, the system for citations, figures and tables, etc.)
- Write the final manuscript

The final draft

Front Matter

- Title (fewest possible words that describe the contents)
- Author's (co-authors) name and address
- Abstract (miniversion of the paper, no citations)
- Keywords

Article Body

- Introduction
- Theoretical and experimental sections
- Results
- Discussion/Conclusion

End Matter

- Acknowledgment (technical help and financial assistance)
- References (at 52 journals were found 33 different styles for listing)
- Appendixes

Abstracts

Descriptive abstract

- or topical abstract, describes the contents but contains too little substance and detail

Informative abstract

- self-explanatory report on a scientific investigation (research objectives for conducting the investigation, the basic method used, and the results and significant conclusions) - 200 to 250 words

Extended abstract (conference proceedings)

Citations and references

- 📄 For a better credibility you have to review the literature and show that your contribution extends from a solid foundation of research
- 📄 Quality and quantity of the sources you have consulted will enhance your work
- 📄 You have make it possible for readers to retrace your steps
- 📄 Your references can be as valuable as your research methods and findings
- 📄 At least three citation styles (in-text citations) and 100 reference styles are commonly used

Citations: Alphabet-number system

Examples in the text

- In 1986 Schmitt (10) developed a
- With optimum design sensitivity (10) ...

References

- 9. Schittkowski, K. 1999. *Nonlinear Programming Software.....*
- 10. Schmitt, L. A. 1986. Symposium summary and concluding remarks. ...

Note: list of references in author alphabetical order

Citations: Name-year (Harward) system

Examples in the text:

- Schmitt (1986) developed a ...
- With optimum design sensitivity (Schmitt, 1986)

References

- Schittkowski, K. *Nonlinear Programming Software,* 1999.
- Schmitt, L. A. Symposium and concluding remarks, ... 1986.


Note: list of references in author alphabetical order

Citations: Order of citation (Vancouver) system

Examples in the text

- In 1986, Schmitt (1) developed a
- With optimum design sensitivity (1)

References

-  1. Schmitt, L. A. (1986). Symposium summary and concluding remarks

Note: list of references not in author alphabetical order

Ethics of scientific writing

- 📄 Avoid the dual publication
- 📄 Don't use the work of others without appropriate attribution
- 📄 List only those co-authors who contributed substantially to the work


Final submission

- ☞ In-house reviews are required?
- ☞ Submit the paper to the journal's editor (only to one journal)
 - Hard-copy of manuscript (usually three or more copies)
 - Disk of the same version
 - Text: Word, Word Perfect, TeX/LaTeX, etc.
 - Figures: tif, gif, postscript, etc.

Editing process

- 📄 Editor log a manuscript and send an acknowledgement that the paper has been received
- 📄 Editor sends the manuscript to reviewers
- 📄 On the basis of the reviews and the editor's opinion, your paper will be accepted, conditional accepted or rejected.

Editors

 I expect the editor to accept all my papers, accept them as they are submitted, and publish them promptly. I also expect him to scrutinize all other papers with the utmost care, especially those of my competitors.

- Dr E H Wood, Mayo Clinic

Checklist for referees

Studies in Earth Science
CONFIDENTIAL REVIEWER'S REPORT

- | | | |
|---|-----|----|
| 1. Is the subject of the paper consistent with the scope of the journal? | YES | NO |
| 2. As far as you know, has this material been published before in English? | YES | NO |
| 3. Does the scientific content justify the space it will occupy? | YES | NO |
| 4. Can any parts of the paper be shortened or omitted without loss of scientific content? | YES | NO |
| 5. Are any errors of fact or logic contained? | YES | NO |
| 6. Are all figures necessary? | YES | NO |
| 7. If the paper contains graphs and tables based on the same data, is it necessary to include both? | YES | NO |
| 8. Does the abstract (normally 50-150 words) bring out the main points of the paper? | YES | NO |
| 9. Is the title suitable and adequate? | YES | NO |
| 10. Are the literature references adequate? | YES | NO |
| 11. What is your overall recommendation? | YES | NO |

PUBLISH AS SUBMITTED

DO NOT PUBLISH

PUBLISH WITH MAJOR REVISION

PUBLISH WITH MINOR REVISION

COMMENTS: Please use a separate sheet to expand on the above and to suggest changes that you feel would improve the manuscript, in particular with regard to its length.

Signature: _____

Date: _____

Proof-reading

📄 Proof-reading and return to the editor

📄 Copyright transfer

📄 Offprint order

Common Proofreader's Marks

Correction	Symbol	Marked text	Corrected text
Delete	<i>g</i>	the old cat	the cat
Restore deletion	<i>stet</i>	the old cat	the old cat
Close up space	<i>∩</i>	the o ld cat	the old cat
Insert	<i>old</i>	the /cat	the old cat
Replace	<i>old</i>	the old cat	the old cat
Insert space	<i>#</i>	the#at	the cat
New paragraph	<i>¶</i>	Once upon a time	Once upon a time
Move to left	<i>⌊</i>	⌊ the dog	the dog
Move to right	<i>⌋</i>	the dog ⌋	the dog
Center	<i>ctr</i>	⌋the dog⌊	the dog
Transpose	<i>Tr</i>	the <u>on</u> dog	on the dog
make lower case	<i>lc</i>	the old dog	the old dog
Capitalize	<i>caps</i>	jim burns	Jim Burns
Period	<i>⊙</i>	Go west/	Go west.
Comma	<i>↗</i>	Come/Jim.	Come, Jim.
Apostrophe	<i>∨</i>	Jim's dog	Jim's dog
Superscript	<i>2</i>	3 m 2	3 m ²
Subscript	<i>2</i>	H 2 O	H ₂ O

Congratulations



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