How to write an abstract?

a) **Abstracts for papers**

b) **Abstracts for presentation**

c) **Abstracts for grant proposal**

What is an abstract?

An abstract is a short version of your paper, presentation, or grant proposal.

An abstract provides an overview of the essential aspects of your paper, presentation, or proposal.

Who is the abstract for?

Abstract should be tailored to the target audience

What should be the key components of the body an abstract?

For a paper or presentation:

1) Why did you do it?

2) How did you do it?

3) What did you find?

4) What does it mean?

What should be the key components of the body an abstract?

For a grant proposal:

1) Why do you want to do it?

2) How are you going to do it?

3) Can you do it?

4) What will you find?

5) How are you going to interpret the findings?

6) What impact will your findings be?

What should be the key components of the body an abstract?

For the <u>lay</u> summary of a grant proposal or scholarship application:

Same as abstract but for a general audience

1) Should be understandable by anyone with a grade 8 education.

2) No jargons, and avoid using abbreviations and acronyms.

3) Present the "big picture".

Format of an abstract

For paper or presentation:

1) Title
2) Authors and affiliations
3) Introduction/background
4) Methods
5) Results
6) Conclusion
7) Acknowledgement

Format of an abstract

For grant proposal:

1) Introduction/Rationale
2) Experiment design and methods
3) Justification for the chosen methods
4) Anticipated results and their interpretation
5) Concluding sentence(s) stating significance or impact

Format of an abstract

For lay summary of proposal:

1) Introduction/Rationale
2) Experiment design/Methods (very brief)
3) Anticipated results
4) Concluding sentence(s) stating significance and impact

Title of an abstract

The title should be a true reflection of the content of the abstract.

Should be clear and with as few words as possible.

Should not have abbreviations, jargons, or unfamiliar acronyms.

Things to consider when writing a title

For a research paper: **Be specific**
(Unless it's a review)

Example:

"Ovalbumin sensitization and challenge increases the number of lung cells possessing a mesenchymal stromal cell phenotype" (Bentley et al, Respir Res. 2010)

Bad example?

The effect of ovalbumin sensitization and challenge on the number of lung cells possessing a mesenchymal stromal cell phenotype

Things to consider when writing a title

For a research paper: **Be informative**

Example:

"Ovalbumin sensitization and challenge increases the number of lung cells possessing a mesenchymal stromal cell phenotype" (Bentley et al, Respir Res. 2010)

Bad example?

The effect of ovalbumin sensitization and challenge on the number of lung cells possessing a mesenchymal stromal cell phenotype

Things to consider when writing a title

For a research paper: **Be informative**

"… it is preferable to make the title a description of what was investigated rather than a statement of the results or conclusions". (ERJ)

Examples

"Orderly recruitment of motor units under optical control in vivo". (Llewellyn et al, Nat Med. 2010)

"Drosophila IAP antagonists form multimeric complexes to promote cell death". (Sandu et al, J Cell Biol. 2010)

Authors and affiliations

Authors of a paper are individuals who have contributed to the **intellectual content** of the paper.

The intellectual components of a paper include experiment design, data analysis and interpretation.

Data collection and supply of materials for the experiments do not qualify as intellectual contribution.

Authors and affiliations

To qualify as an institution affiliated with a paper, all or part of the work of the study has to be carried out in that institution.

"Introduction and background"

In a couple of sentences summarize the current state of knowledge related to the specific work that you are describing or presenting – what is known and what is not.

This should lead to the purpose of your study, i.e., to address the unknown mentioned in the opening sentences.

The question that you seek to answer should be clear at this point.

"Introduction and background"

For the summary of a grant proposal: this section should be expanded because you have more space (usually you have a whole page).

If a reviewer can correctly guess your hypothesis and aims just by reading your introduction, you have done a good job.

"Experiment design and methods"

In between Introduction and Experiment design, you should have a clear and concise hypothesis or hypotheses to serve as guidance for the design of experiments.

Experiments are usually described in conjunction with specific aims that outline the approaches taken in testing the hypothesis.

Only the general methodological approach and key techniques need to be mentioned here. For grant proposal, brief justification of the chosen methods may be necessary.

"Results"

Only report the key findings that will lend support to the conclusion(s) that you are going to draw. It is often a good idea to include numerical data with appropriate statistics. Tables and figures should be discouraged.

In a grant proposal, the expected results should be speculated here, along with some interpretation.

"Conclusion"

In no more than two sentences, explain to your readers why your findings are important, in terms of their relevance to the research question you've posted, and the potential implications.

Never over interpret your results, always make sure the conclusion is supported by the data.

For grant proposal, the potential significance of your research findings should be emphasized here.

What constitutes a good abstract?

A good abstract should focus on one question. This is especially important for conference presentations.

If there are several questions involved, the theme that link the questions should be identified and used as the focus of your abstract.

If the questions cannot be linked by an obvious theme, then they don't belong to the same abstract.

What constitutes a good abstract?

Should an abstract be used to "entice" the reader/audience to read your paper or come to your presentation?

"A sexy start: tell the reader early why he should read your paper. Don't summarize, sell!" – Sounds more like a salesman than a scientist.

Let science do the selling for you. Your job is to make it clear and easy to read.

What constitutes a good abstract?

Good writing always helps. Watch out for those long sentences.

Avoid being subjective; use expressions of emotion carefully.

Respect the format imposed by journals or funding agencies.

Glossary of lay terms:

http://www.irb.ufl.edu/irb01/glossary.htm

Plain language online training (NIH):

http://plainlanguage.nih.gov/CBTs/PlainLanguage/login.asp

Questions?