How to write compelling scientific review papers

Review Articles

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Content

- **Review paper:**
 - Structure
 - Outline
 - Abstract (indicative)
 - Introduction
 - Main analysis section
 - Conclusion
- **Preprint servers**
 - AfricArxiv
 - bioRxiv
 - arXiv
 - Etc.

Choosing the right journals

Review Articles

Overall

About: Review paper outline the overall picture of a particular topic as understood by scientists in the field.

Big picture: Summarising theories and results from a number of research studies. Some review evaluate *methods & results*.

Source material

- Textbooks, internet (with backing statements)
- Read couples of reviews
- Read editorials and letters to the editor
- Journals articles & theses reports
- Avoid writing on little-known areas of research

Two main approaches to write a review: -

- Choose a point and select primary studies based on the chosen area.
- Read all the relevant studies and organise them in a meaningful way.

Review Articles

Content

About: Review paper provide a solid background for a research paper's investigation.

Problem: It also outline any problems that are currently being addressed and explain the basis of any conflicts that exists between experts.

Propose a new model

Used simple word & avoid technical details

Have high impact than research papers

Doesn't follow IMRAD Structure but..

Title, authors and affiliations etc	1 page
Abstract (indicative)	½ page
Introduction	1 to 2 pages
Main analysis section	3 to 18 pages
Conclusion and or recommendation	1 to 3 pages
Acknowledgements	1 page
Figures and Tables	Maximum of 6
References	40 – 100 lists

Outline of a review paper

Title: Transcriptome profiling research in urothelial cells carcinoma

Abstract (use indicative abstract)

Introduction

- Overview
- Urothelial cell carcinoma
- Sequencing technology (RNA-Seq)

Main analysis

- Transcriptome sequencing technology
- RNA-Seq analysis pipelines
- General perspective

Conclusion

- Summary of the main findings
- Summary of hypothesis

Authors contributions

Disclosure of interest

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Acknowledgements

References

[Ahmad *et al* (2020) unpublished work]

Abstract

Indicative

Key Concepts:

- Write an abstract like a table of contents in paragraph form
- Not all review papers required an abstract

Structure:

- Background (optional)
- Problem statement (optional)
- Purpose or state the topic of review
- Overview of content

Example of a review paper abstract

Background	Aerosol serve as cloud condensation nuclei (CCN) and thus have a substantial effect on cloud properties and the initiation of precipitation. Large concentrations of human made aerosols -
Unknown/problem	been reported to both decrease and increase rainfall as a result of their radiative and CCN activities. At one extreme, -
Purpose/Topic statement	pristine tropical clouds with low CCN concentrations rain out too quickly to mature into long-live clouds. On the other hand, heavily polluted clouds evaporate much of their water before precipitation can occur, if they form at all given the reduced surface heating resulting from aerosol haze layer.
Overview of content	We propose a conceptual model that explains this apparent dichotomy.

Introduction

An overview

Key Concepts:

- State the general background and the central topic of the review
- Don't make it longer than 1/5 of the review paper
- Present any recent developments and what is unknown

Structure:

- Background
- Unknown problem
- Purpose or topic statement
- Overview of content

Example of Introduction in a review paper

Background	Mitochondrial genomes differ greatly in size, structural organization and expression both within and between the kingdoms of eukaryotic organism. The mitochondrial genomes of higher plants are much larger (200-2400 kb) and more complex than those animals (14-42kb), fungi(18-176kb) and plastids (120-200kb) [1-4]. Although -
Unknown/problem	there has been less molecular analysis of the plant mitochondrial genome structure in comparison with equivalent animal or fungal genomes,.....
Topic statement	the use of a variety of approaches – such as pulsed-field gel electrophoresis (PFGE), moving pictures (movies) during electrophoresis, restriction digestion by rare-cutting enzymes, two-dimensional gel electrophoresis (2DE) and electron microscopy (EM) – has led to substantial recent progress.
Overview	Here, the implications of these new studies on the understanding of <i>in vivo</i> organization and replication of plant mitochondrial genomes assessed.

Main Analysis

Content of the review

Key Concepts:

- Find the best structure of the main analysis section or content
- Mention types of experiments performed & the data obtained
- Address any controversies in the area you are reviewing.
- Used figures or tables (optional)

Logical structure:

- Chronologically
- Thematically
- Methodologically

Organise the review logically

Chronologically	<ul style="list-style-type: none">- Write about topics according to when they were published- Or examine the sources under the history of the topic
Thematically	<p>Organize around a topic or issue. E.g. from organism, to the organ, to the cell and down to the molecular mechanism within the cell.</p> <ul style="list-style-type: none">- Sometimes you might consider arranging it chronologically while addressing the topic or issue (i.e. combining thematic & chronological concepts).
Methodologically	<p>Here, topics are organize based on the methods, techniques or approaches.</p>

Content of each subheading

Subheading:

Transcriptome sequencing technology

- Context
- Problem/Unknown
- Proposed solution

Conclusion

summarize, generalize &
provide some significance

Key Concepts:

- Main conclusions and recommendations
- Summarise and generalise the main lines of arguments & key findings
- Discuss and restate your interpretations.
- Longer than conclusion section of a research paper. However, keep it brief

Structure:

- Summary
- Interpretations & recommendations

Problems in review papers

Common problems

Most common problems:

- Lack of analysis and commentary
- Review paper is not objective
- Not stating the unknown or problem
- Lack of logical organisation of subtopics
- Referencing errors & missing an in-text citations

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Choosing the right Journals

Identify the right journal

Key Concepts:

- List the target journals of your choice
- Determine the Journal Impact and whether it is open access
- Make sure the scope and editorial policies of the journal match your needs
- Ensure checking the journal requirements and distribution
- Check the journal's peer review process
- Check and read the Instructions to Authors thoroughly

Identifying the right journals

The screenshot shows the ISI Master Journal List homepage. The header includes the Web of Science Group logo, the title 'Master Journal List', and navigation links for 'Search Journals', 'Match Manuscript', 'Downloads', and 'Help Center'. There are also 'Login' and 'Create Free Account' buttons. The main content area has a dark blue background with white text that reads: 'Browse, search, and explore journals indexed in the Web of Science'. Below this, a paragraph explains the Master Journal List's purpose. A search bar with the placeholder 'Search Journal, ISSN or title word...' and a 'Search Journals' button is present. A section titled 'Already have a manuscript?' includes a 'Match Manuscript' button and a brief description of the Manuscript Matcher tool. A 'Feedback' button is located on the right side of the main content area.

ISI journals master list link: <https://mjl.clarivate.com/home>

The screenshot shows the Scopus Preview website. The header includes the Scopus logo, the title 'Scopus Preview', and navigation links for 'Author search', 'Sources', and a 'Create' button. The main content area has a light gray background with the title 'Sources'. Below this, there is a search bar with a dropdown menu showing 'ISSN' and a 'Find sources' button. A section titled 'Improved Citescore' includes a paragraph explaining the updated methodology and a link to 'View CiteScore methodology >'. The 'Create' button in the header is partially visible as 'Crea'.

Scopus Index journals link:
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