HOW TO WRITE A WORLD CLASS METHODOLOGY PAPER

TIPS, TRAPS AND TRAVESTIES

Title Presenter Name,
Degree(s)

Elsevier Author Workshop
Date

Outline

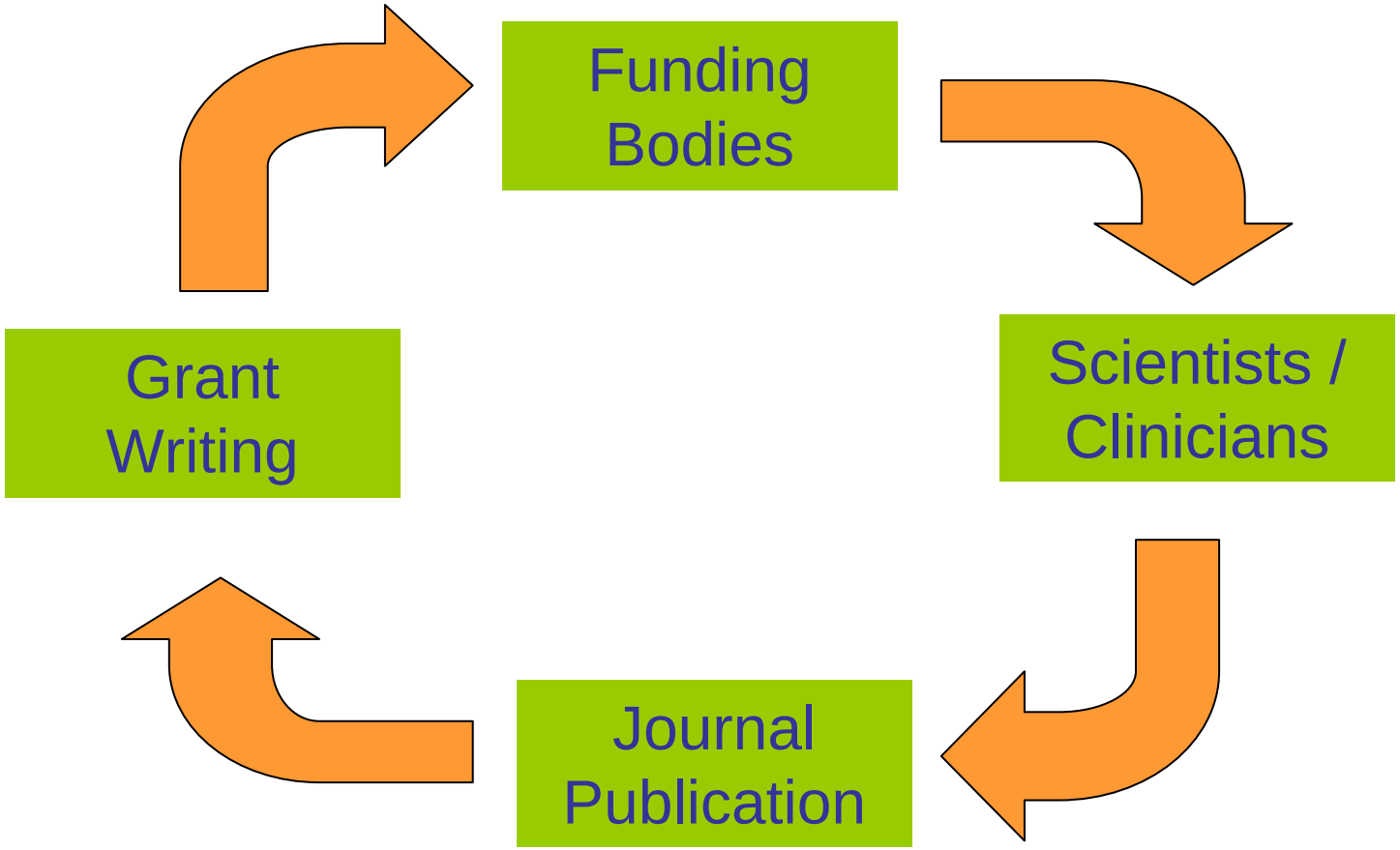
- To publish or not to publish…
- Writing a quality manuscript
  - Preparations
  - Article construction
  - Language
  - Technical details
- Revisions and response to reviewers
- Ethical issues
- Conclusions: getting accepted

To publish or not to publish…

Why publish?

- Scientists publish to **share** with the **research community** findings that **advance knowledge and understanding**
  - To present new, original results or methods
  - To rationalize published results
  - To present a review of the field or to summarize a particular topic

Publish or perish



Publishers do not want zero-cited articles

Editors now regularly analyze citations per article

"The statistic that 27% of our papers were not cited in 5 years was disconcerting. It certainly indicates that **it is important to maintain high standards when accepting papers**... nothing would have been lost except the CV's of those authors would have been shorter…"

– Marv Bauer, Editor, *Remote Sensing of Environment*

Publishers *do* want quality

WANTED

- Originality
- Significant advances in field
- Appropriate methods, case studies and conclusions
- Readability
- Studies that meet ethical standards

NOT WANTED

- Duplications
- Reports of no scientific interest
- Work out of date
- Inappropriate/incomplete methods or conclusions
- Studies with insufficient data

"Just because it has not been done before is no justification for doing it now."

– Peter Attiwill, Editor-in-Chief, *Forest Ecology and Management*

Can I publish this?

- Have you done something new and interesting?
- Have you checked the latest results in the field?
- Have the findings been verified by appropriate analysis and their significance verified?
- Are the methods/measurements valid and reliable?
- Can you describe the scope and limitations of the methods?
- Do your findings tell a nice story or is the story incomplete?
- Is the work directly related to a current hot topic?
- Have you provided solutions to any difficult problems?

If all answers are “yes”, then start preparing your manuscript.

Writing a quality manuscript

- **Preparations**

What type of manuscript?

Full Length Methodology Research

Letters / Rapid Communications / Short Communications

Case Studies

Review Papers

- Self-evaluate your work: Is it sufficient for a full article? Or are your results so thrilling that they need to be revealed as soon as possible?
- Ask your supervisor and colleagues for advice on manuscript type. Sometimes outsiders may see things more clearly than you.

Who is the audience?

- Do you want to reach specialists, multidisciplinary researchers, or a general audience? You will need to adjust information and writing style accordingly
- Journals, even in similar subjects, reach readers with different backgrounds
- Each journal has its own style; read other articles to get an idea of what is accepted
- Is the readership worldwide or local?

Which journal?

- Consider:
  - Aims and scope (check journal websites and recent articles)
  - Types of articles
  - Readership
  - Current hot topics (go through recent abstracts)
  - Asking colleagues for advice

Sometimes it is necessary to lower one's sights or return to the lab/clinic to obtain more data

DO NOT gamble by scattering your manuscript to many journals

Only submit once!

International ethics standards prohibit multiple simultaneous submissions, and editors DO find out!

Format

- Consult and apply the list of guidelines in the “Guide for Authors”
- Ensure that you use the correct:
  - Layout
  - Section lengths (stick to word limits)
  - Nomenclature, abbreviations and spellings (British vs. American)
  - Reference format
  - Number/type of figures and tables
  - Statistics

Consulting the Guide for Authors will save your time and the editor's

All editors hate wasting time on poorly prepared manuscripts

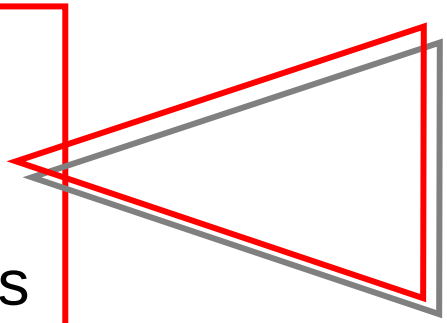
It is a sign of disrespect

Writing a quality manuscript

- Article construction

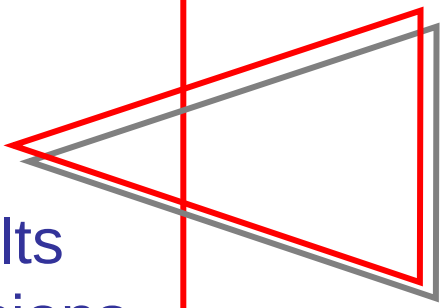
Article structure

- Title
- Authors
- Abstract
- Keywords



Need to be accurate and informative for effective indexing and searching

- Main text
  - Introduction
  - Methodology
  - Case Studies/Results
  - Discussion/Conclusions



Each has a distinct function

- Acknowledgements
- References
- Supplementary material

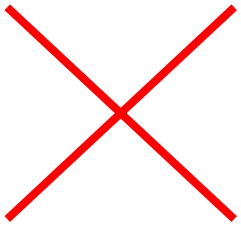
Title

A good title should contain the fewest possible words that adequately describe the contents of a paper

DO	DON'T
Convey main findings of research	Use unnecessary jargon
Be specific	Use uncommon abbreviations
Be concise	Use ambiguous terms
Be complete	Use unnecessary detail
Attract readers	Focus on part of the content only

Title

Two methodologies (reduced species list index and quality of rocky bottoms index) to evaluate the quality of algae populations in the presence of varying pollution gradients



Comparison of two methods for quality assessment of algae populations under varying pollution gradients

Authors and affiliations

Be consistent with spelling, full versus short names, full versus short addresses

Surnames: Pérez-García / Pérez / García

Middle Initial: Use consistently or not at all

First Names: Dave / David

Affiliation: Faculty of Medicine / Faculty of Medical and Health Sciences

Abstract

Types:

Indicative (descriptive) abstracts outline the topics covered in a piece of writing so the reader can decide whether or not to read on. Often used in review articles and conference reports

Informative abstracts summarize the article based on the paper structure (problem, methods, case studies, conclusions), but without section headings

Structured abstracts follow headings required by the journal. Often used in Medical journals

Check carefully which type fits the journal of your choice

Abstract

The quality of an abstract will strongly influence the editor's decision

A good abstract:

- Is precise and honest
- Can stand alone
- Uses no technical jargon
- Is brief and specific
- Minimizes the use of abbreviations
- Cites no references

Use the abstract to "sell" your article

Traps to Avoid in an Abstract

Example:

"This paper presents an innovative set of tools developed to support a methodology to design and upgrade wastewater treatment systems (WTS). Previous work by Grey (2004), Lacey (2001) and others …This paper illustrates the merits of these tools to make the innovative methodology of interest to everyone involved in WTS and will become the new design standard worldwide."

Better to avoid:

- Abbreviations, references (save for the introduction), and exaggerated conclusions

Keywords

Keywords are important for indexing: they enable your manuscript to be more easily identified and cited

Check the Guide for Authors for journal requirements

- **Keywords should be specific**
- **Avoid uncommon abbreviations and general terms**

Keywords

Title: A Methodology for Extreme Groundwater Surge Predetermination in Carbonate Aquifers: Groundwater Flood Frequency Analysis

K. Najib, H. Jourde, S. Pistre

Journal of Hydrology (2008) **352**, 1-15

Keywords: Groundwater flooding, frequency analysis, fractured aquifer, rainfall event, hydraulic head

Bad keywords: methodology, predetermination, aquifer, flood, analysis

Introduction

Provide the necessary background information to put your work into context

The introduction should provide:

- Review of the problems that will be addressed through the methodology
- General definition or overview of the approach and whether it has been used before or is novel
- Description of how the data will be collected and analyzed
- In brief terms, what was achieved

Introduction

DO

- Consult the Guide to Authors for word limit
- "Set the scene"
- Outline "the problem" and hypotheses
- Ensure that the literature cited is balanced, up to date and relevant
- Define any non-standard abbreviations and jargon

Introduction

DON'T

- Write an extensive review of the field
- Cite disproportionately your own work, work of colleagues or work that supports your findings while ignoring contradictory studies or work by competitors
- Describe methods, results or conclusions other than to outline what was done and achieved in the final paragraph
- Overuse terms like "novel" and "for the first time"

Introduction

Methods in elastic tissue biology: Elastin isolation and purification

Robert P. Mecham *

In theory, elastin should be an easy protein to purify: simply expose a tissue to high heat and extreme conditions of pH and the residue that remains is elastin. While most proteins… elastin survives because of its unique chemical composition and highly cross-linked nature... We now know, however, that the hot alkali product is highly fragmented and lacks important sequences found in the intact protein… Elastin is the protein that imparts elasticity to the fiber and… are thought to help structure the elastic fiber during tissue growth and maturation [1–3]… As detailed below, relatively harsh techniques are required to remove microfibrils from elastin, most likely due to covalent interactions between the two [6]...

Methodology

The Methodology section should be the bulk of the paper and it must provide sufficient information so that a knowledgeable reader can reproduce the experiment

Methods can include statistical, historical, sampling and/or theoretical

Where appropriate, actual examples of the use of the methodology should be included (case studies)

Equations, algorithms, flow charts and figures/tables are often included in the methodology section for descriptive purposes

Unless the Guide for Authors states otherwise, use present tense for methodology-type papers

Methodology

The methodology section can be generally divided into several specific parts

1. Define the population and the methods of sampling
2. Describe the instrumentation
3. Describe the procedures and if relevant, the time frame
4. Describe the analysis plan
5. Describe any approaches to ensure validity and reliability
6. State any assumptions
7. Describe the scope and limitations of the methodology

Results/Case Study

Often consists of applying the methodology to a case study

DO

- Use figures and tables to summarize data
- Show the results of statistical analysis
- Confirm that the method is reliable
- Justify the choice of methods
- Define the limitations of the method

DON'T

- Duplicate data among tables, figures and text
- Use graphics to illustrate data that can easily be summarized with text

Graphics

"Readers… often look at the graphics first and many times go no further. Therefore, the reviewer should be particularly sensitive to inclusion of clear and informative graphics."

– Henry Rapoport, Associate Editor, *Journal of Organic Chemistry*

Graphics

Figures and tables are **the most effective way to present results**

BUT:

- Captions should be able to stand alone, such that the figures and tables are understandable without the need to read the entire manuscript
- Captions should not contain extensive experimental details that can be found in the methodology section
- The data represented should be easy to interpret
- Colour should only be used when necessary

Table 2. Colour codes and notations of the soil layers

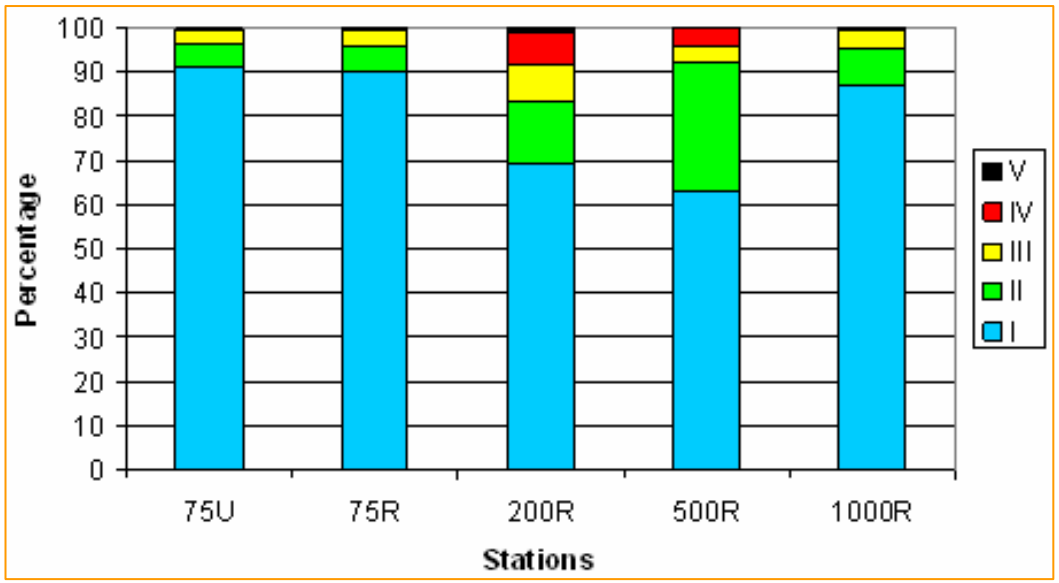
Habitat	Depth (cm)	Colour codes	Colour notation
Woodland	0-5	10YR4/2	Dark grayish brown
	5-10	2.5Y5/3	Light olive brown
	10-15	2.5Y6/3	Light yellowish brown
	15-20	2.5Y6/4	Light yellowish brown
	20-30	2.5Y6.5/3	Light yellowish brown -Light olive brown
	30-40	2.5Y5/3	Light olive brown
	40-50	2.5Y5/3	Light olive brown
	50-60	2.5Y6/3	Light yellowish brown
	60-70	2.5Y5/4	Light olive brown
	70-80	2.5Y6.5/3	Light yellowish brown -Light olive brown
	80-90	2.5Y6.5/3	Light yellowish brown -Light olive brown
	90-100	2.5Y5/3	Light olive brown
Wetland	0-5	2.5Y4/2	Dark grayish brown
	5-10	2.5Y5.5/2	Grayish brown -Dark grayish brown
	10-15	2.5Y5/2	Grayish brown
	15-20	2.5Y4/1.5	Dark gray -Dark grayish brown
	20-30	2.5Y4/2.5	Dark grayish brown -Olive brown
	30-40	2.5Y4/2.5	Dark grayish brown -Olive brown
	40-50	2.5Y4/2	Dark grayish brown
	50-60	2.5Y4/2	Dark grayish brown
	60-70	2.5Y4/2	Dark grayish brown
	70-80	2.5Y4/2	Dark grayish brown
	80-90	2.5Y4/2	Dark grayish brown
	90-100	2.5Y4/2	Dark grayish brown
Grassland	0-5	2.5Y4/2	Dark grayish brown
	5-10	5Y5/2	Olive gray
	10-15	5Y6/2	Light olive gray
	15-20	5Y6/2	Light olive gray
	20-30	5Y6/2	Light olive gray
	30-40	5Y6.5/2	Light olive gray -Olive gray
	40-50	5Y6/2	Pale olive
	50-60	5Y6/2	Pale olive
	60-70	5Y6/2	Light olive gray -Pale olive
	70-80	5Y6/2	Light olive gray -Pale olive
	80-90	5Y6/2	Pale olive
	90-100	5Y6/2	Pale olive

Illustrations should only be used to present essential data

The information in the table can all be presented in one sentence:

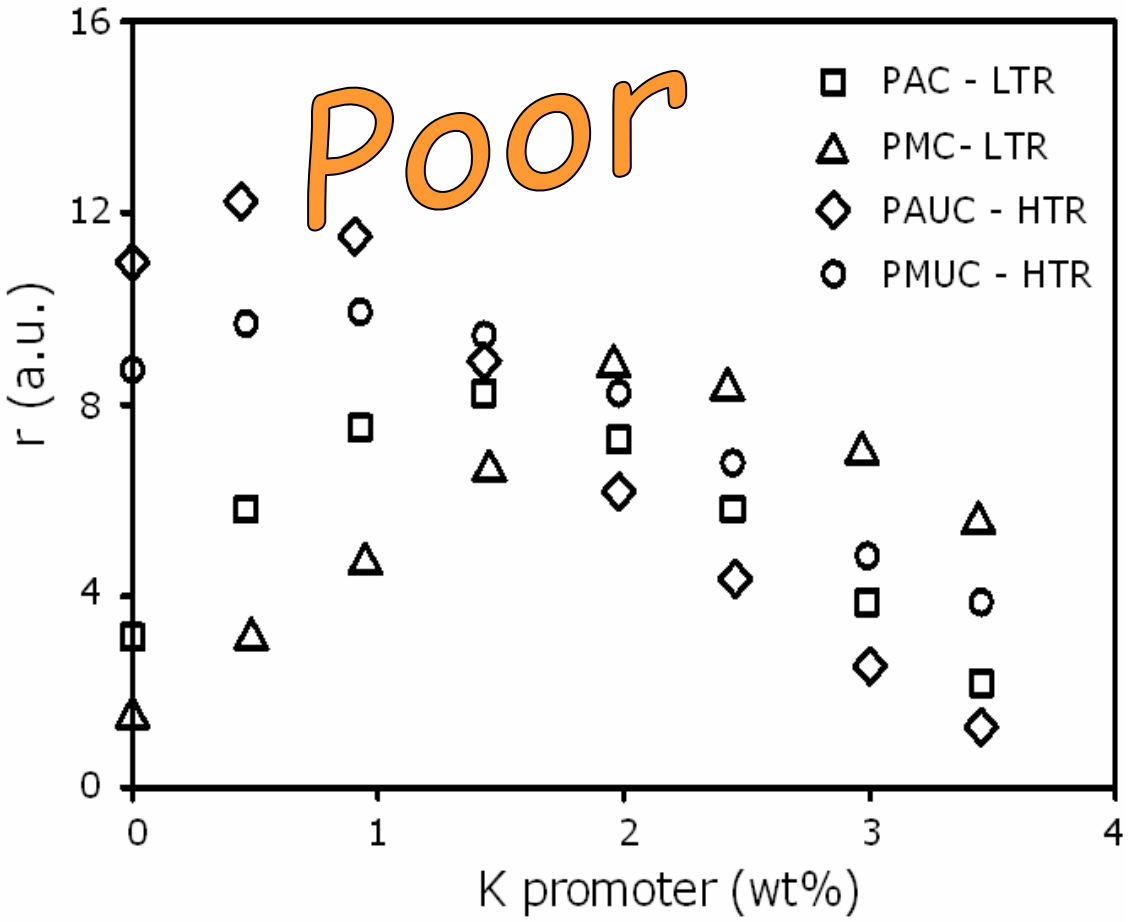
'The surface soils were dark grayish brown, grading to light olive brown (woodland), light olive brown (wetland), and pale olive (grassland) at 100 cm.'

Summarize results in the text where possible

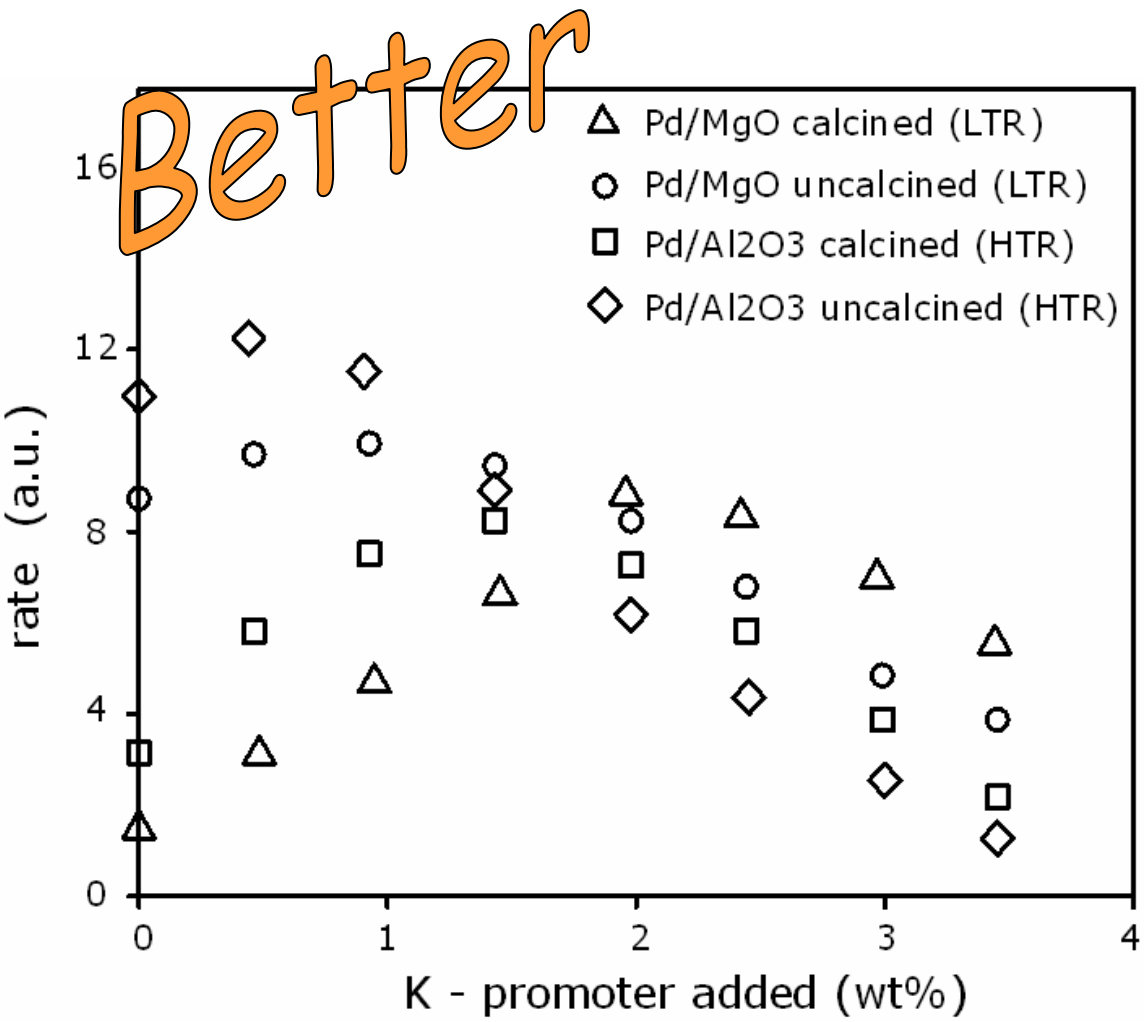


The figure and table show the same information, but the table is more direct and clear

	ECOLOGICAL GROUP				
Station	**I**	**II**	**III**	**IV**	**V**
75U	91.3	5.3	3.2	0.2	0.0
75R	89.8	6.1	3.6	0.5	0.0
200R	69.3	14.2	8.6	6.8	1.1
500R	63.0	29.5	3.4	4.2	0.0
1000R	86.7	8.5	4.5	0.2	0.0

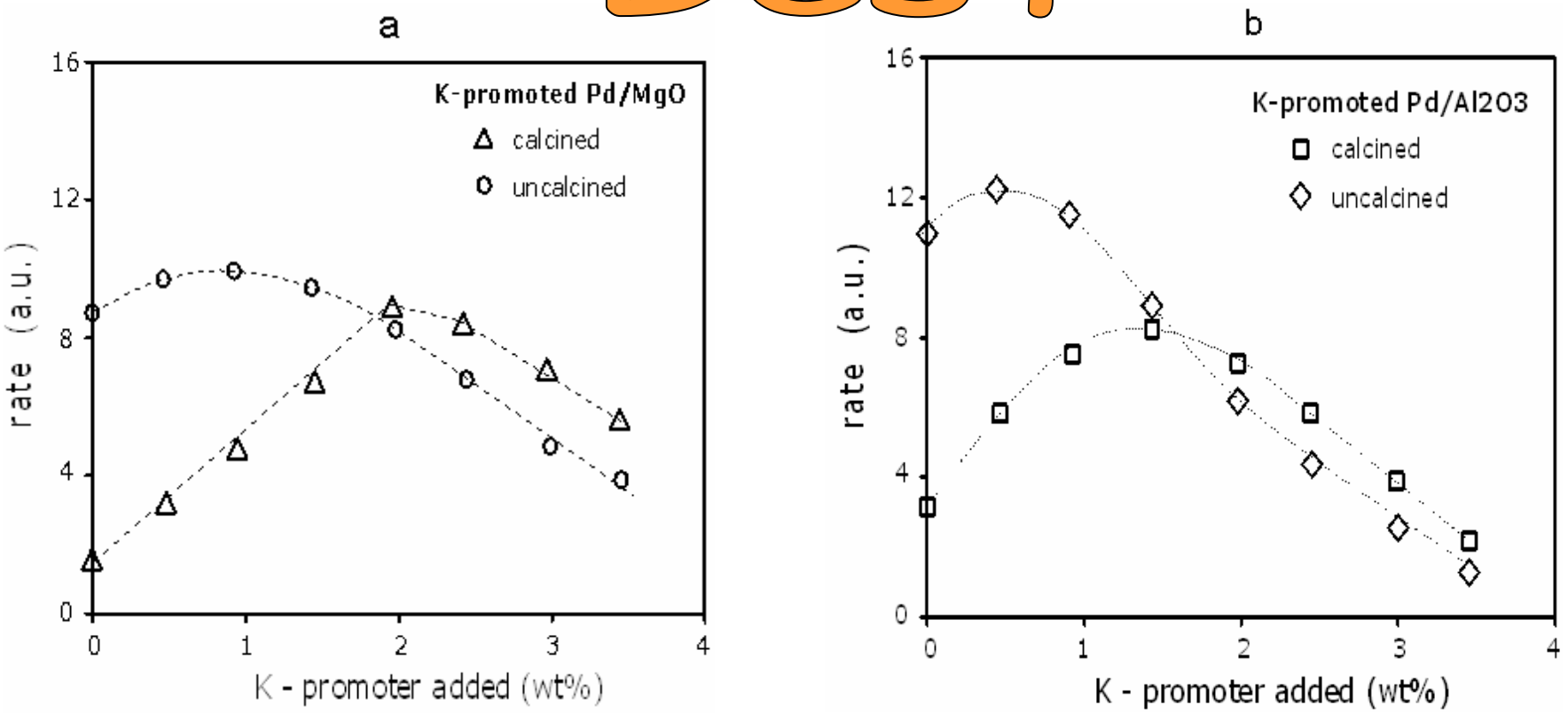


- **Legend is poorly defined**
- **Graph contains too much data**
- **No trend lines**



- **Legend is well defined but there is still too much data and no trendlines**

Best



- **Legend is clear**
- **Data is better organized**
- **Trend lines are present**

Statistics

- Indicate the statistical tests used with all relevant parameters

  mean ± SD

- Give numerator and denominators with percentages

  40% (100/250)

- Use means and standard deviations to report normally distributed data

Statistics

- Use medians and interpercentile ranges to report skewed data
- Report *P* values

  p=0.0035 rather than p<0.05
- The word “significant” should only be used to describe “statistically significant differences”

Discussion

For some methodology journals, the discussion and conclusions are lumped into one section and are usually brief

Describe

- Did the methods address the model?
- Were the methods successful?
- How did the findings relate to those of other studies?
- Were there limitations of the study?

Avoid

- Making "grand statements" that are not supported by the methods or the results of the case study

  Example: "This novel treatment will massively reduce the prevalence of malaria in the third world"

- Introducing new results or terms

Conclusions

Put your study into **CONTEXT**

Describe how it represents an advance in the field

Suggest future applications

Suggest areas of future research

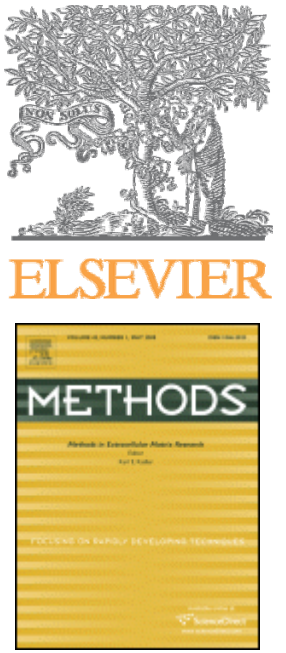
BUT

Avoid repetition with other sections

Avoid being overly speculative

Don’t over-emphasize the impact of your study

Conclusions



Proteomic analysis of cartilage proteins

Richard Wilson [a], Daniele Belluoccio [a], John F. Bateman [a,b,*]

3. Concluding remarks

The proteomic analysis of cartilage is at an early stage of development compared with many other tissues and biological samples. The quantity of highly anionic macromolecules which dominate the secretory/ECM profile of cartilage presents a major challenge above and beyond the common difficulties associated with proteomic analysis of complex samples, such as wide dynamic range of protein abundance. With improvements in sample preparation methods and techniques for resolution of cartilage extracts by 2-DE, such as those described, we are now achieving more comprehensive analyses of cartilage tissues. Further improvements in the sensitivity and accuracy of MS instrumentation will enable deeper mining of the cartilage proteome, identification of novel cartilage proteins and more extensive characterization of cartilage protein isoforms. In turn this will expand our understanding of the role of cartilage matrix components from early skeletal development and throughout adulthood. Importantly, the ability to conduct proteomic analysis on mouse tissues will facilitate the use of experimental mouse models for a range of cartilage pathologies, including chondrodysplasias and arthritis. In the near future it is likely that the direct proteomic analysis of cartilage tissues in progressive models of cartilage degradation will lead to insight into the underlying pathological mechanisms and identification of new protein biomarkers for joint disease.

Conclusions

Better to avoid:

- Downplaying negative results and deeming them significant when there is no proof, making statements based on personal opinion without scientific support

Example:

"Although the statistical analysis did not provide a reasonable level of significance, we believe that the methodology is a valid approach towards the design of new wastewater treatment facilities. In fact, we argue that these methods could be adopted to the design of any treatment system worldwide."

Acknowledgements

Acknowledge anyone who has helped you with the study, including:

- Researchers who supplied materials, reagents, or computer programs
- Anyone who helped with the writing or English, or offered critical comments about the content
- Anyone who provided technical help

State why people have been acknowledged and ask their permission

Acknowledge sources of funding, including any grant or reference numbers

References

Check the Guide for Authors for the correct format

Check

- Spelling of author names
- Punctuation
- Number of authors to include before using “et al.”
- Reference style

Avoid

- Personal communications, unpublished observations and submitted manuscripts not yet accepted
- Citing articles published only in the local language
- Excessive self-citation and journal self-citation

References

Check the style and format as required – it is not the editor's job to do so for you

Harvard System (alphabetical by author/date):

Berridge, MJ 1998, Neuronal calcium signaling, *Neuron* vol. 21: pp. 13-26

APA (American Psychological Association) System (alphabetical)

Berridge, M.J. (1998). Neuronal calcium signaling. *Neuron* 21, 13-26

Vancouver System (numbered in order or citation)

1. Berridge MJ. Neuronal calcium signaling. Neuron. 1998;21:13-26

There are a number of other systems in use and variations for all systems

Supplementary material

Information related to and supportive of the main text, but of secondary importance, may be contained in an appendix

Includes:

- Extensive statistical analysis
- Supplementary mathematical analysis
- Additional data
- Video data

Will be available online when the manuscript is published

Writing a quality manuscript

- Language

“Journal editors, overloaded with quality manuscripts, may make decisions on manuscripts based on formal criteria, like grammar or spelling. Don't get rejected for avoidable mistakes; make sure your manuscript looks perfect”

Arnout Jacobs, Elsevier Publishing

Thus, both the science and the language need to be sound

The three “C”s

Good writing possesses the following three “C”s:

- **Clarity**
- **Conciseness**
- **Correctness (accuracy)**

The key is to be as brief and specific as possible without omitting essential details

Know the enemy

Good writing avoids the following traps:

- **Repetition**
- **Redundancy**
- **Ambiguity**
- **Exaggeration**

These are common annoyances for editors

Repetition and Redundancy

Vary the sentences used when writing the abstract or describing findings at the end of the introduction

Don’t copy from other sections verbatim!

Avoid words with the same meaning

In addition, a systematic analysis of the data was also presented…

After statistical analysis of the data, the methods were then modified…

Avoid using the same descriptive word twice in one sentence

In this paper, a simple methodology for classifying simple composite wastes has been proposed.

Repetition and Redundancy

Avoid circular sentences

In order to compare the differences in the two analytical methods, the dependent variable was set to concentration, in order to determine if changes had occurred.

The reason for the experiment is described twice, in slightly different terms

Ambiguity

Ensure correct use of “which”, commas and hyphens

“**Calcium regulated transcription**” has a different meaning from

“**Calcium-regulated transcription**”

In “To identify biomarkers of prostate cancer, we performed microarray analysis, using custom cDNA arrays”

The second comma should be deleted

Ambiguity

Ensure correct use of “which”, commas and hyphens

In “Data were normalised to the internal reference housekeeping gene actin, which showed…”

The “which” is used incorrectly, referring to actin rather than to the normalisation of data

“Data were normalised to the internal reference housekeeping gene actin, revealing that…” is correct

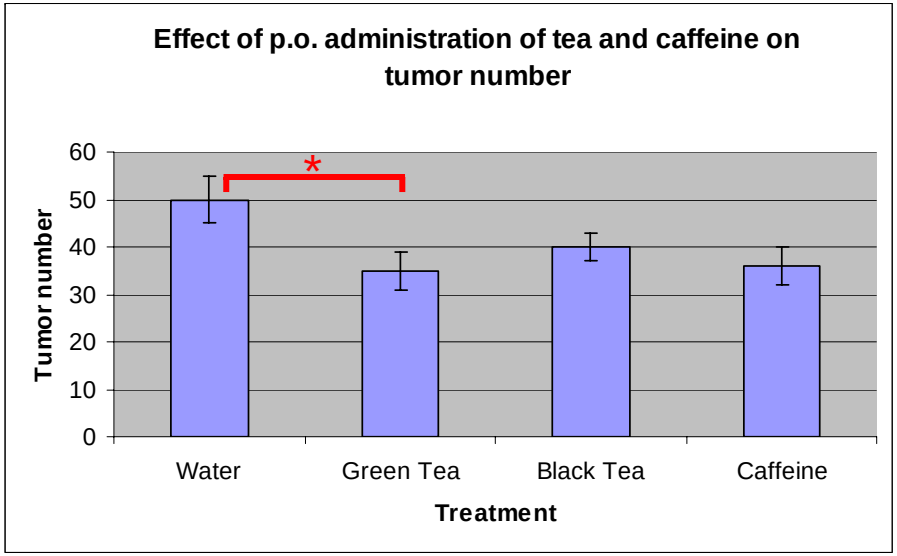
Ambiguity

Semi-colons are used in place of periods to separate two parallel sentences. They do not take the place of a comma or colon.

The data and information were grouped into four broad classes mainly based on the constituent chemicals in the waste stream, namely; the physiochemical properties, toxicity effects, exposure potency and waste quantity.

The data and information were grouped into four broad classes mainly based on the constituent chemicals in the waste stream. The classes included the physiochemical properties, toxicity effects, exposure potency and waste quantity.

Exaggeration



"There was a massive decrease in the number of tumors following p.o. administration of green tea"

Beware of exaggeration but do indicate significance

Other common traps

Inconsistent tense – don't mix tenses in the same sentence

Before tumors were microdissected, epithelial cells are…

Inconsistent use of plural or singular

In eight patients, a biopsy from the affected sites of the head and neck was performed

In eight patients, biopsies from the affected sites of the head and neck were performed

Other common traps

Unbalanced sentences – make sure the clauses either side of “compared with” match up

Expression levels of p53 in smokers were compared with non-smokers…

Expression levels of p53 in smokers were compared with those in non-smokers…

Other common traps

Incorrect use of respectively – two corresponding lists are required

The proportions of various monocyte surface markers were 45%, 63% and 70%, respectively

The proportions of monocytes positive for CD163, CD7 and CD11a were 45%, 63% and 70%, respectively

Other common traps

Incorrect use of etc. / and so on

"The two groups of data were compared using a variety of statistical methods including a t-test, chi squared analysis, etc."

It is important here to define the tests used as they are particular to the paper, not part of a natural series and not obvious to the reader.

Other common traps

Overuse of etc / and so on

By comparison with results found in the literature, such as those presented by MacDonald et al. (2003), Smith (2005), Burns (2006), and so on, the consequences presented here show a similar trend."

The use of "etc." and "and so on" should be minimized in a manuscript and, whenever possible, a full series of examples should be provided, particularly when referencing the literature

Language Editing Services

Your manuscript is precious, invest in it

- Specialist scientific and medical editing services are commercially available to polish the language in your manuscript prior to journal submission
- Rates start from $8 per page

More information can be found on the Elsevier website at:

http://www.elsevier.com/wps/find/authorsview.authors/languagepolishing

Language Editing Services

Recommended companies include:

- Edanz Editing
- Liwen Bianji
- International Science Editing
- Asia Science Editing
- SPI Publisher Services
- Diacritech Language Editing Service

Use of an English-language editing service listed here is not mandatory, and will not guarantee acceptance for publication in Elsevier journals

Writing a quality manuscript

- Technical details

Layout

- Keep line spacing, font and font size consistent throughout – double-spaced 12-point Times New Roman is preferred
- Use consistent heading styles throughout and no more than three levels of headings
- Number the pages
- Number lines if journal requires – check the Guide for Authors
- Order and title sections as instructed in the Guide for Authors – Figure and Table sections are normally together following References

Length

"…25-30 pages is the ideal length for a submitted manuscript, including ESSENTIAL data only"

Julian Eastoe, Co-editor, *Journal of Colloid and Interface Science*

Consult the Guide for Authors for word and graphic limits

Letters or short communications have stricter limits on the length. For example, 3000 words with no more than five illustrations

Abbreviations

- Define non-standard abbreviations on first use in both the abstract and the main text
- Check the Guide for Authors for a list of standard abbreviations that don't need defining
- Don't abbreviate terms used only once or twice in the entire manuscript – spell these out in full
- Acronyms: capitals not required in the definition unless a proper noun or start of a sentence

ubiquitin proteasome system (UPS)

NOT

Ubiquitin Proteasome System (UPS)

Cover letter

- **This is your chance to speak to the editor directly**
- **Keep it brief, but convey the particular importance of your manuscript to the journal**
- **Suggest potential reviewers**

This is your opportunity to convince the journal editor that they should publish your study, so it is worth investing time at this stage

Cover letter

Include:

- Editor name – Address to journal editor, not generic
- First sentence – provide title, author list and journal name
- Briefly describe:
  - your research area and track record
  - the main findings of your research
  - the significance of your research
- Confirm the originality of the submission
- Confirm that there are no competing financial interests

Revisions and Response to Reviewers

Final checks

Revision before submission can prevent early rejection

What can I do to ensure my paper is in the best possible state prior to submission?

- Ask colleagues to take a look and be critical
- Check that everything meets the requirements set out in the Guide for Authors – again!
- Check that the scope of the paper is appropriate for the selected journal – change journal rather than submit inappropriately

Final checks

Revision before submission can prevent early rejection

What can I do to ensure my paper is in the best possible state prior to submission?

- If necessary, get a colleague or approved editing service to improve the language and ensure that the manuscript possesses the three “C”s
- Ensure that the literature cited is balanced and that the aims and purpose of the study, and the significance of the results, are clear
- Use a spellchecker

Post-referee revision

Carefully study the reviewers' comments and prepare a detailed letter of response

- Respond to all points; even if you disagree with a reviewer, provide a polite, scientifically solid rebuttal rather than ignore their comment
- Provide page and line numbers when referring to revisions made in the manuscript
- Perform additional calculations, computations, or experiments if required; these usually serve to make the final paper stronger

Post-referee revision

The reviewer is clearly ignorant of the work of Bonifaci et al. (2008) showing that the electric field strength in the ionization zone of the burned corona is less than the space charge free field before the corona onset….

Thank you for your comment. However, we feel that the assumption in our model is supported by recent work by Bonifaci et al. (2008), who showed that the electric field strength in the ionization zone of the burned corona is less than the space charge free field before the corona onset.

Post-referee revision

- State specifically what changes you have made to address the reviewers' comments, mentioning the page and line numbers where changes have been made
- Avoid repeating the same response over and over; if a similar comment is made by multiple people explain your position once and refer back to your earlier response in responses to other reviewers or the editor

Post-referee revision

Clearly differentiate responses from reviewers' comments by using a different font style

Reviewer's Comments: It would also be good to acknowledge that geographic routing as you describe it is not a complete routing solution for wireless networks, except for applications that address a region rather than a particular node. Routing between nodes requires further machinery, which detracts from the benefits of geographic routing, and which I don't believe you have made practical.

Author's reply: We agree and will add an appropriate caveat. Note that for data-centric storage (name-based exact-match and range queries for sensed events), the storage and query processing mechanisms "natively" address packets geographically – without a "node-to-location" database.

Dr. Ramesh Govindan,
Professor, Computer Science Department, University of Southern California

Accepting rejection

Don’t take it personally!

- Try to understand why the paper has been rejected
- Evaluate honestly – will your paper meet the journal’s requirements with the addition of more data or is another journal more appropriate?
- Don’t resubmit elsewhere without significant revisions addressing the reasons for rejection and checking the new Guide for Authors

Accepting rejection

- **Suggested strategy for submitting elsewhere:**

- In your cover letter, declare that the paper was rejected and name the journal
- Include the referees' reports and show how each comment has been addressed
- Explain why you are submitting the paper to this journal; is it a more appropriate journal?

Ethical Issues

Unethical behavior "can earn rejection and even a ban from publishing in the journal"

Terry M. Phillips, Editor, *Journal of Chromatography B*

Unethical behavior includes:

- Multiple submissions
- Redundant publications
- Plagiarism
- Data fabrication and falsification
- Improper use of human subjects and animals in research
- Improper author contribution

Multiple submissions

Multiple submissions save your time but waste editors'

The editorial process of your manuscripts will be completely stopped if the duplicated submissions are discovered.

"It is considered to be unethical…We have thrown out a paper when an author was caught doing this. I believe that the other journal did the same thing"

James C. Hower, Editor, *International Journal of Coal Geology*

Multiple submissions

Competing journals constantly exchange information on suspicious papers

You should not send your manuscripts to a second journal UNTIL you receive the final decision of the first journal

DON'T DO IT!!

Redundant publication

An author should not submit for consideration in another journal a previously published paper

- Published studies do not need to be repeated unless further confirmation is required
- Previous publication of an abstract during the proceedings of conferences does not preclude subsequent submission for publication, but full disclosure should be made at the time of submission

Redundant publication

- Re-publication of a paper in another language is acceptable, provided that there is full and prominent disclosure of its original source at the time of submission
- At the time of submission, authors should disclose details of related papers, even if in a different language, and similar papers *in press*

Plagiarism

"Plagiarism is the appropriation of another person's ideas, processes, results, or words without giving appropriate credit, including those obtained through confidential review of others' research proposals and manuscripts"

Federal Office of Science and Technology Policy, 1999

Plagiarism

"Presenting the data or interpretations of others without crediting them, and thereby gaining for yourself the rewards earned by others, is theft, and it eliminates the motivation of working scientists to generate new data and interpretations"

Bruce Railsback, Professor, Department of Geology, University of Georgia

For more information on plagiarism and self-plagiarism, please see:
http://facpub.stjohns.edu/~roigm/plagiarism/

Plagiarism

Plagiarism is a serious offence that could lead to paper rejection, academic charges and termination of employment. It will seriously affect your scientific reputation.

DON'T DO IT!

Unacceptable paraphrasing, even with correct citation, is considered plagiarism

Paraphrasing

- **Original (Gratz, 1982):**

  Bilateral vagotomy resulted in an increase in tidal volume but a depression in respiratory frequency such that total ventilation did not change.

- **Restatement 1:**

  Gratz (1982) showed that bilateral vagotomy resulted in an increase in tidal volume but a depression in respiratory frequency such that total ventilation did not change.

Ronald K. Gratz. *Using Other's Words and Ideas*.
Department of Biological Sciences, Michigan Technological University

Paraphrasing

- **Original (Buchanan, 1996):**

  What makes intentionally killing a human being a moral wrong for which the killer is to be condemned is that the killer did this morally bad thing not inadvertently or even negligently, but with a conscious purpose – with eyes open and a will directed toward that very object.

- **Restatement 2:**

  Buchanan (1996) states that we condemn a person who intentionally kills a human being because he did a "morally bad thing" not through negligence or accident but with open eyes and a direct will to take that life.

Ronald K. Gratz. *Using Other's Words and Ideas*.
Department of Biological Sciences, Michigan Technological University

Data fabrication and falsification

- Fabrication is making up data or results, and recording or reporting them
- Falsification is manipulating research materials, equipment, processes; or changing / omitting data or results such that the research is not accurately represented in the research record

"The most dangerous of all falsehoods is a slightly distorted truth"

G.C. Lichtenberg (1742–1799)

Unethical research

- Experiments on human subjects or animals should follow related ethical standards, namely, the Helsinki Declaration of 1975, as revised in 2000 (5)

- If doubt exists concerning the compliance of the research with the Helsinki Declaration, authors must explain the rationale for their approach and demonstrate approval from the institutional review body

Improper author contribution

Authorship credit should be based on

1. Substantial contributions to conception and design, or acquisition of data, or analysis and interpretation of data
2. Drafting the article or revising it critically for important intellectual content
3. Final approval of the version to be published

Authors should meet conditions 1, 2, and 3. Those who have participated in certain substantive aspects of the research project should be acknowledged or listed as contributors. Check the Guide for Authors and ICMJE guidelines: http://www.icmje.org/

Conclusion: Getting Accepted

What gets you accepted?

Attention to details
Check and double check your work
Consider the reviews
English must be as good as possible
Presentation is important
Take your time with revision
Acknowledge those who have helped you
New, original and previously unpublished
Critically evaluate your own manuscript
Ethical rules must be obeyed

– Nigel John Cook, Editor-in-Chief, *Ore Geology Reviews*