



Organização: Pró-Reitoria de Pesquisa - USP



Capacitação em Escrita Científica

Módulo 1

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Grupo de Nanomedicina e Nanotoxicologia

Instituto de Física de São Carlos, USP

USP, 2013

Módulo 1: O Gênero Literário

Seções de Um Artigo Científico

Módulo 2: Estrutura 1: *Abstract*

Módulo 3: Estrutura 2: *Introduction*

Módulo 4: Estrutura 3: *Results and Discussion, Conclusion*

Módulo 5: Estilo

Linguagem 1: Especificidade, Complexidade e Ambiguidade

Módulo 6: Linguagem 2: Redundâncias, Ação no Verbo, Fluidez de Texto, Ritmo de Escrita

Módulo 7: Linguagem 3: *Plain English*, Escrever em Inglês, Preposições

Módulo 8: Linguagem 4: *Topic Sentences, Cover Letters, Final Remarks*

Módulo 1

O Gênero Literário

Estrutura 1



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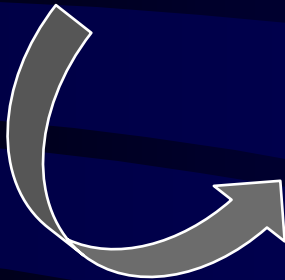


Why?, What?, When?....

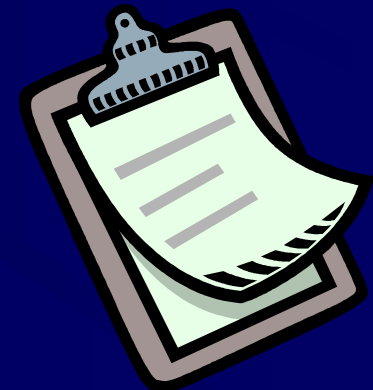
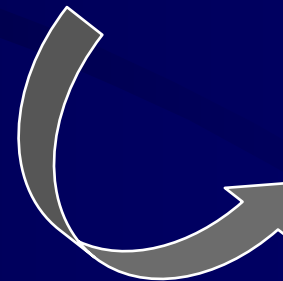
What do scientists do?

Publication is one of the most important steps
of the scientist's work

Scientists Publish Ideas, not results!!



Scientific Method /
Hypothesis testing



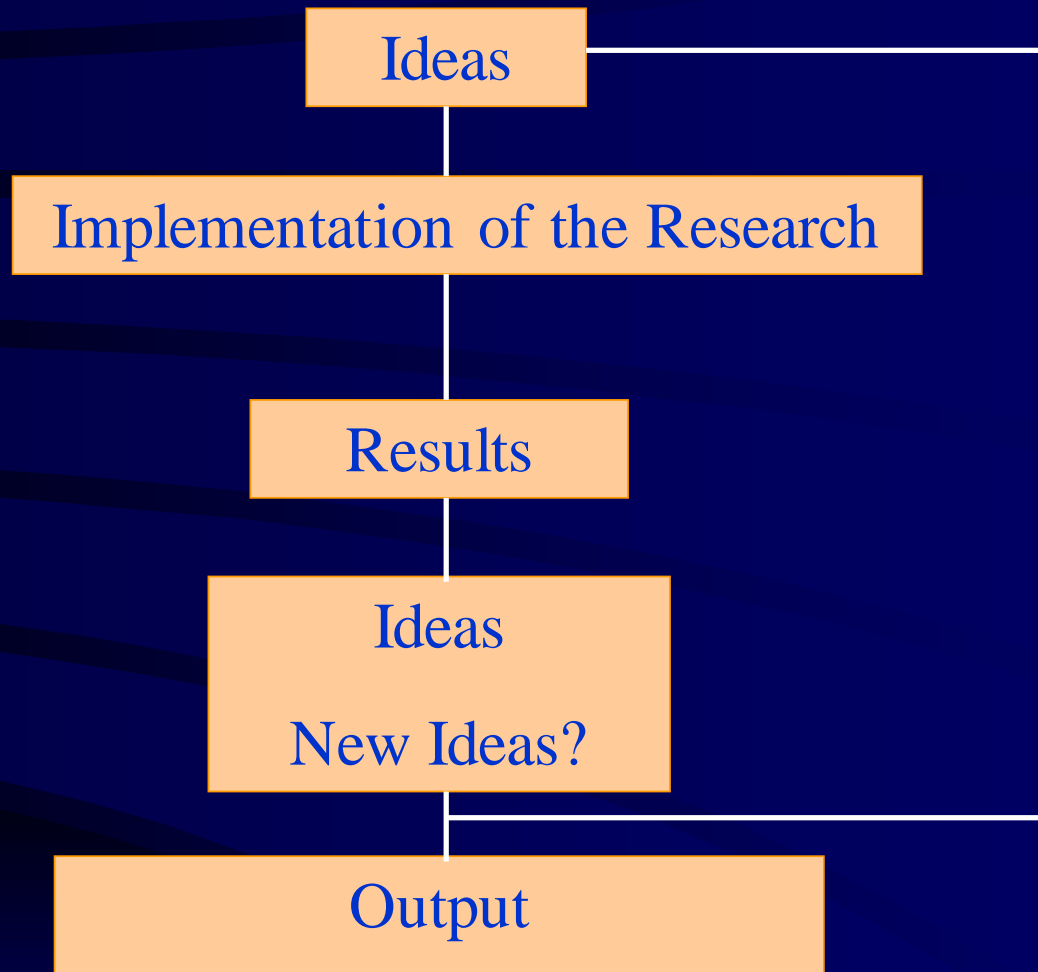
When the initial
question/problem/hypothesis
had been answered/solved/tested !!!!!!

It is all about Timing

- Distinct time scales for distinct areas;
- Depends on the type of research:



Publishing Ideas





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Interesting....

In 2011: 2 cars were fabricated every second

<http://www.worldometers.info>

2013: A new scientific paper is published every

20 s

Science, 2013



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1. *General Considerations*

Lesson Zero

Scientific writing as a “new” Literary Genre



A bit of History...

In the very beginning....

- Informal Letters exchanged by scientists.
- **1665**: Creation of the first scientific periodical: *The Philosophical Transactions of the Royal Society*.

This new arena for discussion led to the development of
a new genre:

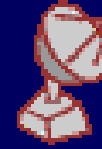
The Scientific Report



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The main characteristics of Scientific Writing

1. Audience



Who will read your paper?

Highly technical journal vs. less specific ones.

What terms will you have to define?

Background information included



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2. *Clarity and Conciseness*

Report your results clearly

Use as few words as necessary

Save words!!

3. *References*

**All information or ideas must
be referenced!**

Including your own work

4. *No Room for Suspense*

Provide the reader with your most important findings/contributions since the very beginning



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2. *Sections of a Regular Paper*



Types of Scientific Publications



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Thesis

Research
Articles

Books

Encyclopedias



Reviews

Regular
Papers

Short
Communicati
ons/Letters



Adapted from: Hill et al., Teaching ESL students to read and write experimental papers, TESOL Quarterly, 16: 333, 1982:

A good Title describes the contents of the paper

Function: to attract reader's attention

Use specific words strongly associated with the outcome of the paper: **Keywords**

A well-written Title is concise and clear:
Use the **minimum** number of words.

Rewrite the title in the final version of the paper.

Example 1:

Executive hubris: the case of a bank CEO

Too general??

Niamh M. Brennan, John P. Conroy, Accounting, Auditing & Accountability
Journal, Vol. 26 Iss: 2, pp.172 – 195 (2013)



Example 2:

Can self-managed superannuation fund trustees earn the equity risk premium?

Peter J. Phillips, Michael Baczynski, John Teale, Accounting Research Journal, Vol. 22 Iss: 1, pp.27 – 45, 2009



Example 3:

Commitment to business ethics in UK organizations

Georgina Whyatt, Greg Wood, Michael Callaghan, *European Business Review*, Vol. 24 Iss: 4, pp.331 – 350, 2012.



Example 4:

The effect of forest land use on the cost of drinking water supply: A spatial econometric analysis

Ecological Economics, 92, 126–136, 2013



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An Useful Strategy



Title, Authors and Affiliations



Example 5:

Forest land use negatively impacts the cost of drinking water supply: A spatial econometric analysis

Example 6:

Forest land use raises the cost of drinking water supply

!!!!!!

Example 7:

*Forest land use raises the cost of drinking water supply
in Southern California*

!!!!!!

Title, Authors and Affiliations

Emphasize your key findings whenever possible

Title:

Metal-Polymer nanocomplexes induce spontaneous regression of lung tumors

Title:

NLRP6 negatively regulates innate immunity and host defence against bacterial pathogens

Arnand et al.,. Nature, 2012, doi:10.1038/nature11250

Title 3: Tissue expression of MRP-8-related nucleotide: a calcium-binding protein of the S100 protein family, in the human placenta as revealed by non-radioactive in situ hybridization technique.

Too wordy!!

Title 4: Expression of the S100-related MRP8 gene in human placenta tissue.

Better!!

Example 8:

Factors influencing accountants' behavioural intentions to use and actual usage of enterprise resource planning systems in a global development agency

Wordy ????

Philmore Alleyne, Marcia Lavine, Journal of Financial Reporting and Accounting, Vol. 11 Iss: 2, pp.179 – 200, 2013.

Be concise:

The following phrases do not add any useful information:

A Report of a Case of...

The Treatment of...

A Study of...

The Effects of...



Title, Authors and Affiliations



Who are the authors of a paper?

Guidelines to define authorship:

All authors must be able to present/discuss/defend the paper.

Guidelines to define authorship:



Authorship credit should be based on

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

Authors should meet conditions 1, 2, and 3.

Sources: -Scientific Writing, Easy When ou Know How, Peat, J., Elliot, E., Baur, L., Keena, V.,
BMJ Books, 2009

-Int. Committee of Medical J. Editors, Ann. Intern. Med., 1997, 126, 36.



Title, Authors and Affiliations



Authors Names Sequence:

First Name

The researcher who did the work, junior researcher.

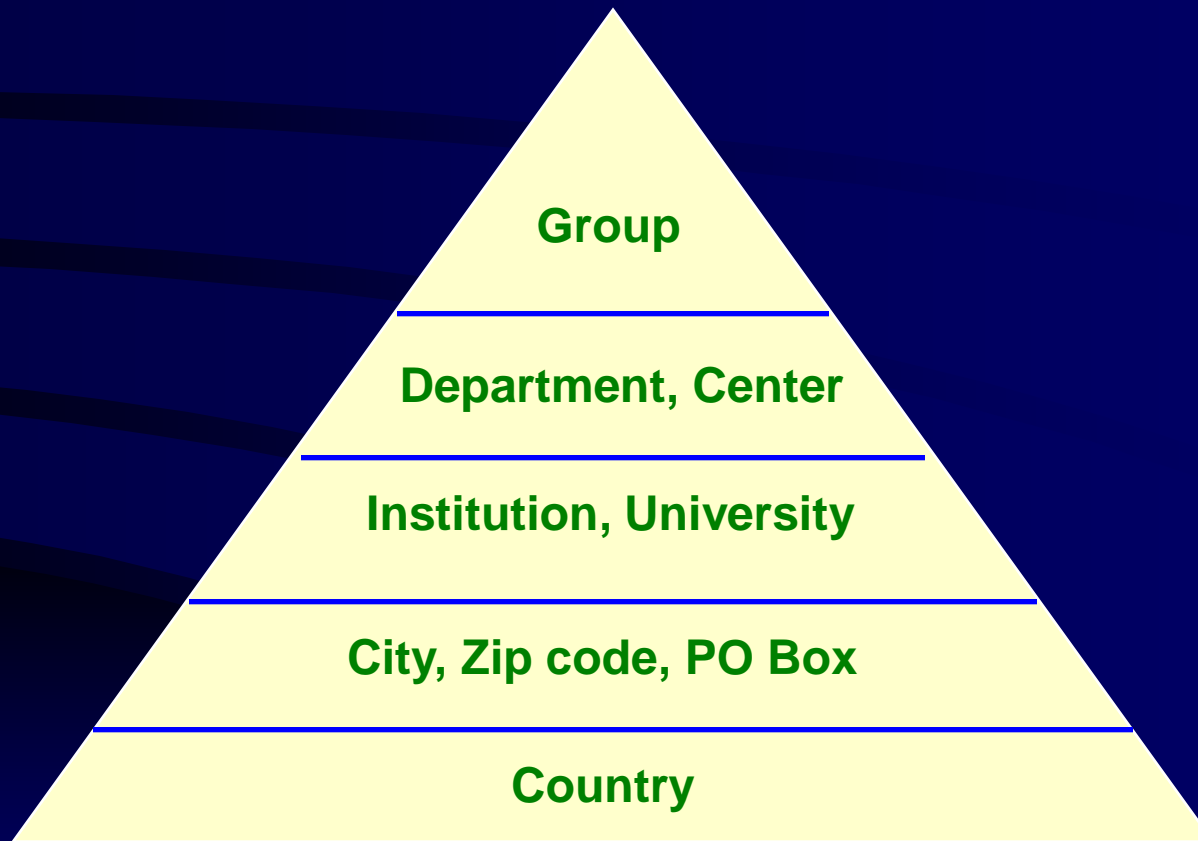
Middle names

Anyone who intellectually contributed to the work

Last Name

The responsible for the research: supervisor/ group head/
senior scientist

Affiliations usually include the following information:





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Abstract



Abstract



Self-assembly of components larger than molecules into ordered arrays is an efficient way of preparing microstructured materials with interesting mechanical and optical properties. Although crystallization of identical particles or particles of different sizes or shapes can be readily achieved, the repertoire of methods to assemble binary lattices of particles of the same sizes but with different properties is very limited. This paper describes electrostatic self-assembly of two types of macroscopic components of identical dimensions using interactions that are generated by contact electrification. The systems we have examined comprise two kinds of objects (usually spheres) made of different polymeric materials that charge with opposite electrical polarities when agitated on flat, metallic surfaces. The interplay of repulsive interactions between like-charged objects and attractive interactions between unlike-charged ones results in the self-assembly of these objects into highly ordered, closed arrays. Remarkably, some of the assemblies that form are not electroneutral—that is, they possess a net charge. We suggest that the stability of these unusual structures can be explained by accounting for the interactions between electric dipoles that the particles in the aggregates induce in their neighbors.

Grzybowski et al., Nature Materials 2, 241–245 (2003)



- 1) Context:** Self-assembly of components larger than molecules into ordered arrays is an efficient way of preparing microstructured materials with interesting mechanical and optical properties.
- 2) GAP:** Although crystallization of identical particles or particles of different sizes or shapes can be readily achieved, the repertoire of methods to assemble binary lattices of particles of the same sizes but with different properties is very limited.
- 3) Purpose:** This paper describes electrostatic self-assembly of two types of macroscopic components of identical dimensions using interactions that are generated by contact electrification.
- 4) Methodology:** The systems we have examined comprise two kinds of objects (usually spheres) made of different polymeric materials that charge with opposite electrical polarities when agitated on flat, metallic surfaces.
- 5) Results:** The interplay of repulsive interactions between like-charged objects and attractive interactions between unlike-charged ones results in the self-assembly of these objects into highly ordered, closed arrays. Remarkably, some of the assemblies that form are not electroneutral—that is, they possess a net charge.
- 6) Conclusions:** We suggest that the stability of these unusual structures can be explained by accounting for the interactions between electric dipoles that the particles in the aggregates induce in their neighbors.

Grzybowski et al., *Nature Materials* 2, 241–245 (2003)



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Introduction



Introduction

General

Contextualization

Your Field

Sumarizing Previous
Research

Purpose

Specific

Your work



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Experimental



Materials

What materials were employed?

Where did the materials come from?

Methods/Procedures

Reference to any well established methods and analyses

Details concerning the procedure adopted

Justifying the procedures adopted

Data analyses

Methods used for data processing and analyses



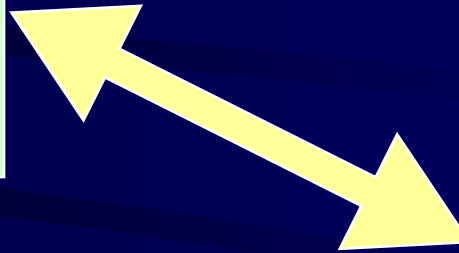
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Results and Discussion

Introduction
(purpose)

Results and Discussion
(Key Results)





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Conclusion

In contrast to the Introduction, the conclusions section starts the **Specific-to-General** Movement.



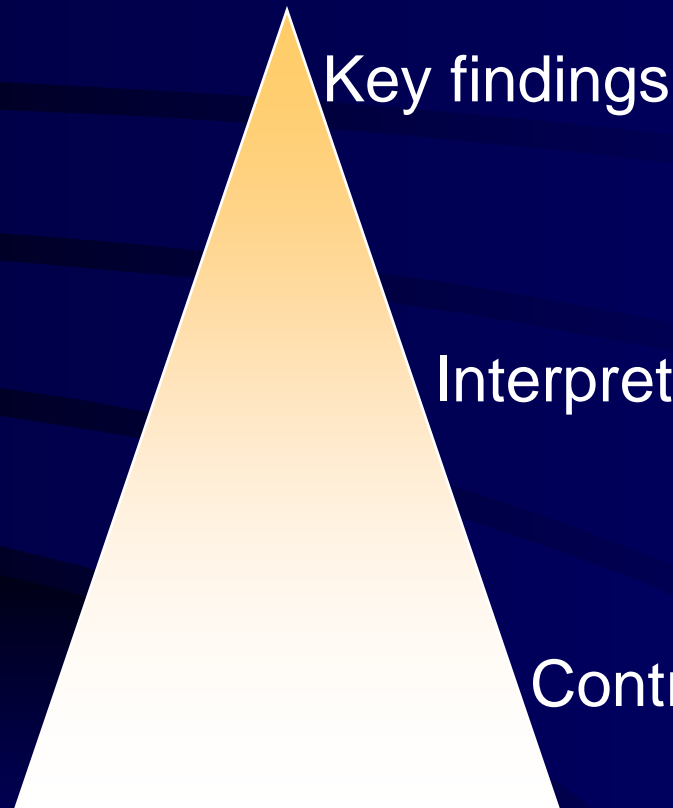
Conclusion

Pyramidal Structure

Specific



General



All information or ideas must be referenced!
Including your own work

There are a number of different formats/styles you may use to cite other's work in the text, or arrange the references list:

Always consult the Journal's Guide for Authors

1. The citation-sequence system

References are numbered in the order they appear in the text.

Examples

“....However, recent reports have been made on the fabrication of ultrathin films of metallic phthalocyanines and polyelectrolytes via the electrostatic layer-by-layer technique (LBL).¹⁰

(10) Lutt, M.; Fitzsimmons, M. R.; Li, D. Q. *J. Phys. Chem. B* **1998**, *102*, 400.



2. The name-year system

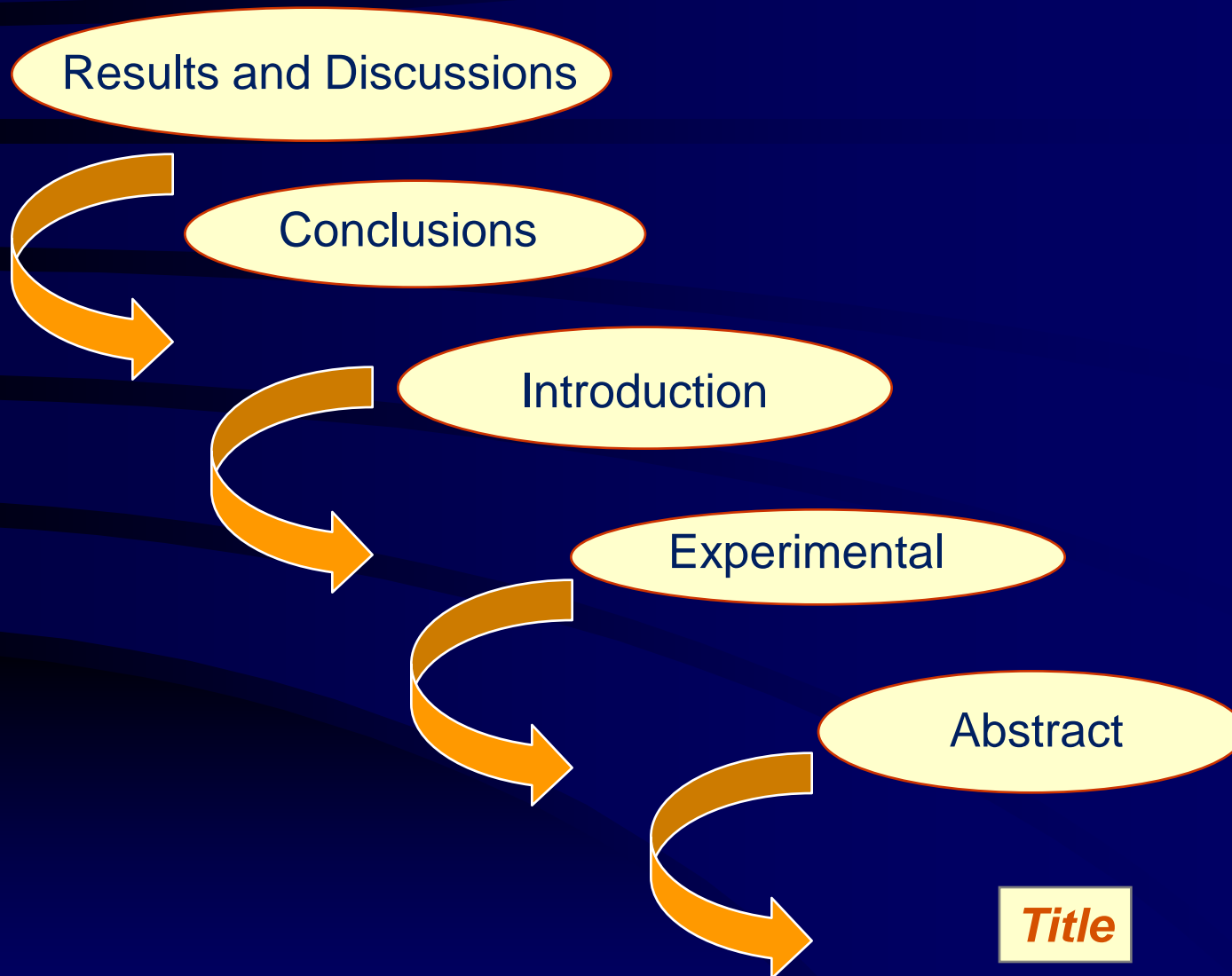
References are listed alphabetically, using the first author's last name.

Examples

“....The layer-by-layer (LbL) technique has been largely employed in the immobilization of proteins and other biomolecules following the pioneering work of Lvov et al. [Lvov et al., 1993; Lvov et al., 1995]....”

Lvov, Y., Ariga, K., Ichinose, I., Kunitake, T., 1995. Assembly of multicomponent protein films by means of electrostatic layer-by-layer adsorption. J. Am. Chem. Soc. 117, 6117- 6123.

Lvov, Y., Decher, G., Sukhorukov, G. 1993. Assembly of Thin Films by Means of Successive Deposition of Alternate Layers of DNA and Poly(allylamine). Macromolecules 26, 5396-5399.



Begin writing in English

Take your notes in English

**~~Final version of a paper translated into
English~~**

You may cite others' words, data, etc. using your own words;

Do not paraphrase other author's text

Do not paraphrase your early papers.



Plagiarism



CÓDIGO DE
BOAS PRÁTICAS
CIENTÍFICAS

As más condutas graves mais típicas e frequentes são as seguintes.

- (a) A *fabricação*, ou afirmação de que foram obtidos ou conduzidos dados, procedimentos ou resultados que realmente não o foram.
- (b) A *falsificação*, ou apresentação de dados, procedimentos ou resultados de pesquisa de maneira relevantemente modificada, imprecisa ou incompleta, a ponto de poder interferir na avaliação do peso científico que realmente conferem às conclusões que deles se extraem.
- (c) O *plágio*, ou a utilização de ideias ou formulações verbais, orais ou escritas de outrem sem dar-lhe por elas, expressa e claramente, o devido crédito, de modo a gerar razoavelmente a percepção de que sejam ideias ou formulações de autoria própria.

http://www.fapesp.br/boaspraticas/codigo_fapesp0911.pdf



Relatório da Comissão de Integridade de Pesquisa do CNPq

A comissão instituída pela portaria PO-085/2011 de 5 de maio de 2011, constituída pelos pesquisadores Alaor Silvério Chaves, Gilberto Cardoso Alves Velho, Jaílson Bittencourt de Andrade, Walter Colli e coordenada pelo Dr. Paulo Sérgio Lacerda Beirão, diretor de Ciências Agrárias, Biológicas e da Saúde do CNPq, vem apresentar seu relatório final

Plágio: consiste na apresentação, como se fosse de sua autoria, de resultados ou conclusões anteriormente obtidos por outro autor, bem como de textos integrais ou de parte substancial de textos alheios sem os cuidados detalhados nas Diretrizes. Comete igualmente plágio quem se utiliza de ideias ou dados obtidos em análises de projetos ou manuscritos não publicados aos quais teve acesso como consultor, revisor, editor, ou assemelhado.

Autoplágio: consiste na apresentação total ou parcial de textos já publicados pelo mesmo autor, sem as devidas referências aos trabalhos anteriores.

From the Editors of ACS Journals:

*Recycling Is Not Always Good: The
Dangers of Self-Plagiarism, ACS Nano, 6 (1), 1–4, 2012*

Take-Home Message

1. *The Importance of Writing in a Scientist's
Life*

2. *What is a Scientific Paper?*

3. *Main Characteristics of Scientific Writing*



-Introduction to Journal-Style Scientific Writing:

<http://abacus.bates.edu/~ganderso/biology/resources/writing/HTWgeneral.html>

-<http://www.inter-biotec.com/biowc/style.html>

-Scientific Writing, Easy When you Know How, Peat, J., Elliot, E., Baur, L., Keena, V., BMJ Books, 2009

-Hill et al., Teaching ESL students to read and write experimental papers, TESOL Quarterly, 16: 333, 1982:

-Int. Committee of Medical J. Editors, Ann. Intern. Med., 1997, 126, 36.

Valtencir Zucolotto

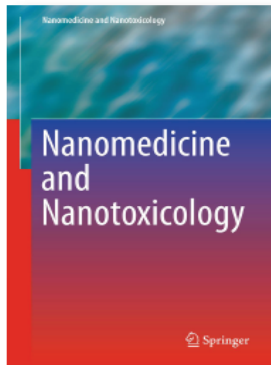
Journal of Biomedical Nanotechnology

Associate Editor

2012 Impact Factor: 5.256



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Series Ed.: Zucolotto, Valtencir

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