

# Techniques and Tools to Enhance your Scientific Writing in English

Introduction  
Part I

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# Courses

- **Scientific Writing (USP–Sao Carlos)**
  - V. Zucolotto
- **Writing in the Sciences (coursera.org)**
  - Kristin Sainani

# Overview

- **Challenges of Scientific Writing**
  - The importance of publishing
- **Practice**
  - Main sections of scientific paper ...
- **Supporting material**
  - Techniques for scientific writing
  - Tools available

# Resources for You

- **Scientific writing one-stop-shop**
- <http://sciwrite1stopshop.blogspot.com.br/>

# Scientific Writing (1)

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- What?
  - Why?
  - How?

# Scientific Writing in English (2)

- Why write in English?
- Difficulties for non-native speakers?
  - Interference of native language
  - Language barriers ?

# Scientific Writing: Techniques and Tools (3)

- **Techniques**
  - **Annotation**
- **Software tools to help**
  - **Structure**
  - **Linguistic**



# What is Scientific Writing?


- **Scientists solved/answered/tested**
  - **Initial Question, Problem, Hypothesis**
- **Ready to divulge their**
  - **Ideas with Results/Findings**
- **THEN >> publish**

# Why Write?

- Write >> TO publish
- Publish >> TO share, expose
  - Your research for others to
    - learn about it
    - benefit from it
    - use it

# Important

- **Writing**
  - accounts for “half” the effort
- **Publishing**
  - Recognition, exposure



**“Interesting and Unpublished is  
equivalent to non-existent”**

George M. Whitesides, *Adv. Mat.*, 16, 1375, 2004

# What to Publish?

- **Scientists publish**
  - Ideas
  - **NOT JUST results!**

# Scientific Writing: How?

- An “art”?
- Requires structure
  - Well-written
  - Enables reader to follow thread

# Real-world Analogy: A Recipe

- Recipe to bake a cake
- Given set of instructions
- Follow them
  - If clear and well-organized
  - End result: your finished cake 😊

# Who is your audience?

- Who will read your paper?
  - Highly technical journal
  - Less specific
- What terms must you define?
- What background information?



# Example: Readers

— “Implantable electronic device that delivered insulin to the human body”

Sandia engineer [Carlson, 1982]

(1) Electrical engineer familiar with electronics, **not** with diabetes

(2) Medical doctor familiar with diabetes, **not** with electronics of device

# Organize your ideas

- **Develop outline**
  - **Show main ideas and correct order**
- **How?**
  - 1. Write down ALL main ideas**
  - 2. List subordinate and relate them**
  - 3. Avoid repetition**

# Tip

- **Divide information into**
  - **Sections**
    - **with descriptive headings**

# Results

- Complete?
- Provide basis for publication?
- Key findings?
- Supporting evidence?

>> Organize them into **logical order**,  
not chronological

# Tip

- Shuffle results until
  - Effective progression of argument
  - (Some say “printout” ...)

# Good Writing?

- Communicates idea
- Clearly
  - Understandable
  - Effectively
- Requires time and effort

# Write to reader(s)

- **Clearly**
  - Plain words
  - Language easily understood
- **Concisely**
  - Brief
  - Only necessary words

# How to attract readers?

- Use specific words


- Strongly associated with **outcome** of paper

>> **Keywords**

Important for identification by  
Systematic Literature Review (SLR)



# Recommendation: READ

- 
- Read in English
  - Pay attention AND note
    - what interests you
  
  - Prelude to “annotation”

# Recommendation: WRITE

- Write in English from beginning
  - Your paper
    - Even if it is difficult!
  - Lab Notes
    - Keep at it

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~~Final version of paper translated into English?~~

# Keep in Mind

- Complex ideas don't require complex language
- Reading scientific writing should be
  - Easy
  - Enjoyable

“Writing in the Sciences” ([coursera.org](https://www.coursera.org))

# Contact Information



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