Standard Science Sequence

- Title
- Abstract
- Introduction
- Materials & Methods
- Results
- Discussion
- Conclusion
- References

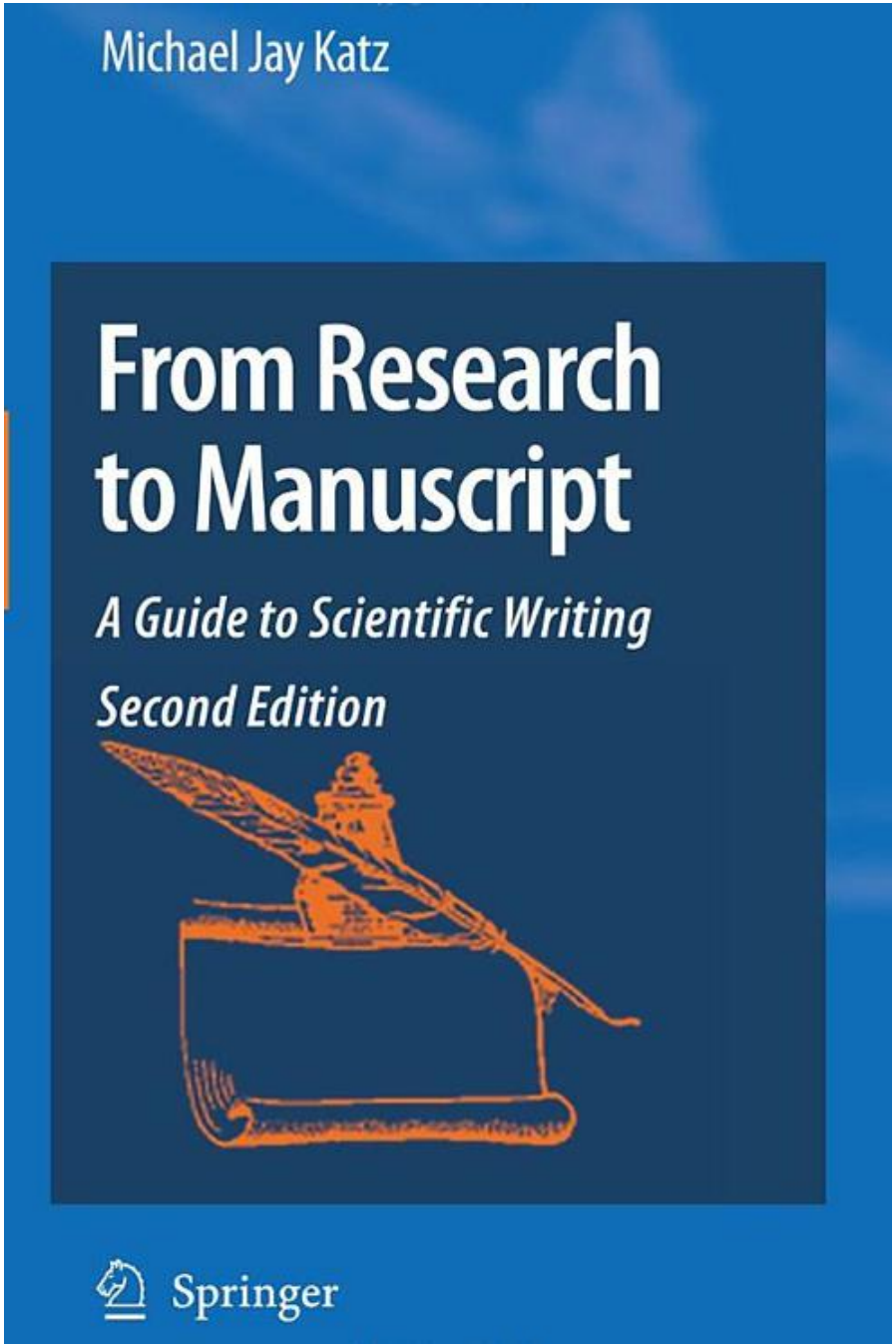
5. Be thoughtful.
6. Last item.

-- As you progress.

1. Start here!
2. What done? How?
3. Explain, examine.
4. Think hard!

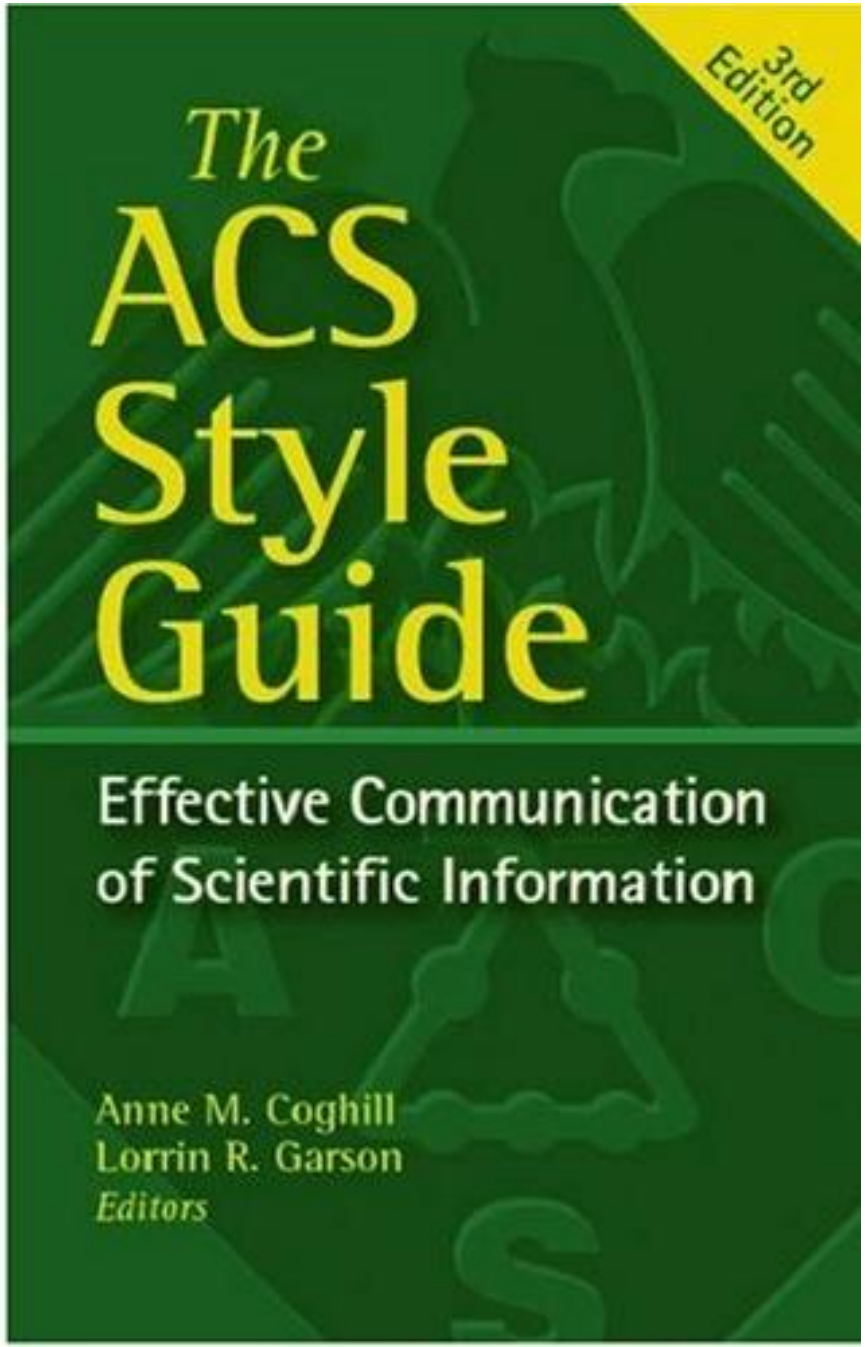
-- As you progress.

Textbooks



Scientific Writing Books I

From Research to Manuscript: A Guide to Scientific Writing. 2/e. Michael J. Katz. Springer: New York, **2009**. ($17.95; Amazon, accessed 01/19/10)



Scientific Writing Books II

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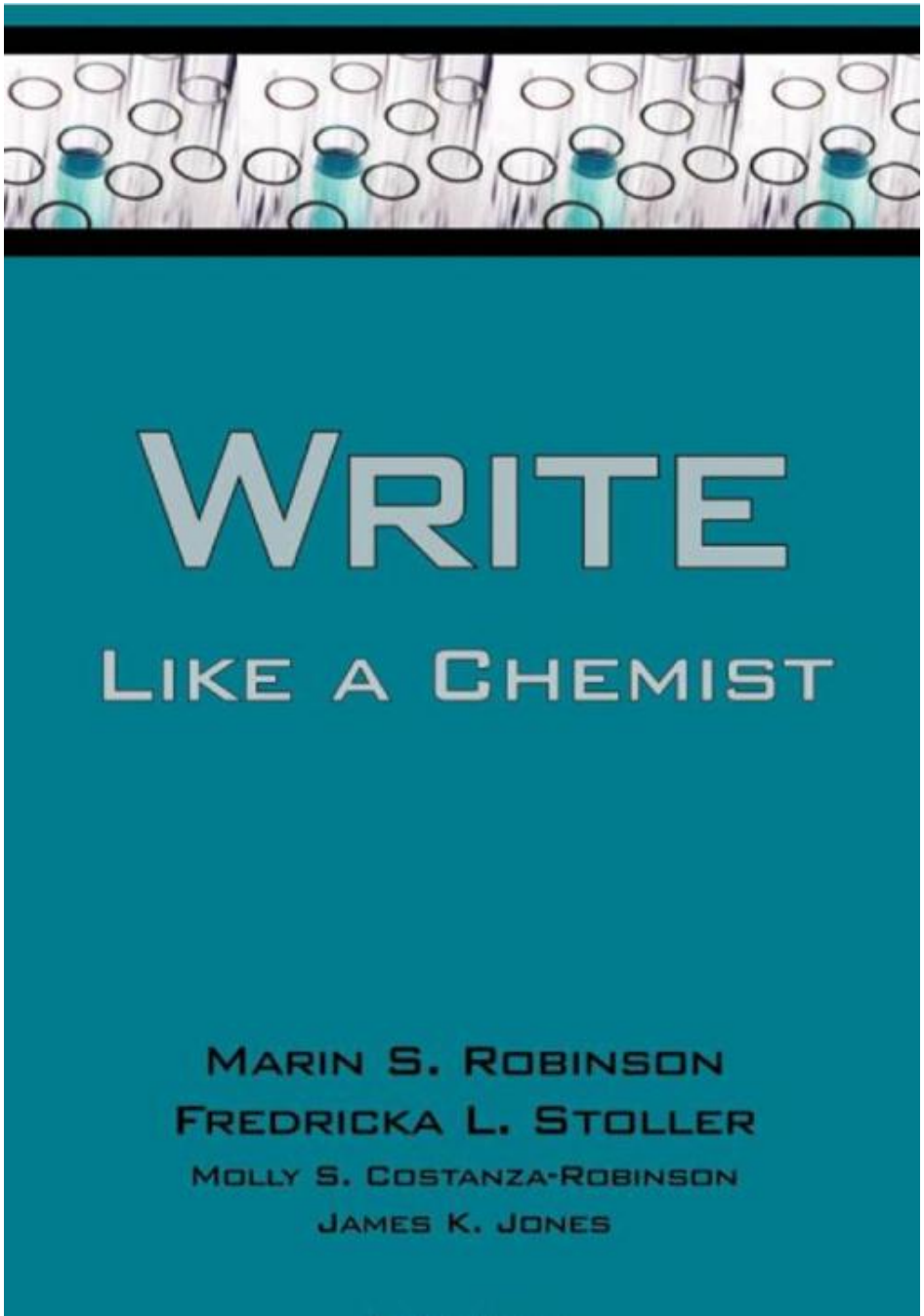

Scientific Writing Books III

Write Like a Chemist: A Guide and Resource. Marin S. Robinson, Fredricka L. Stoller, Molly Costanza-Robinson, and James K. Jones. Oxford University Press, USA: New York, **2008**. (Paperback: $44.04; Hardcover: $119.38; Amazon, accessed 01/19/10).

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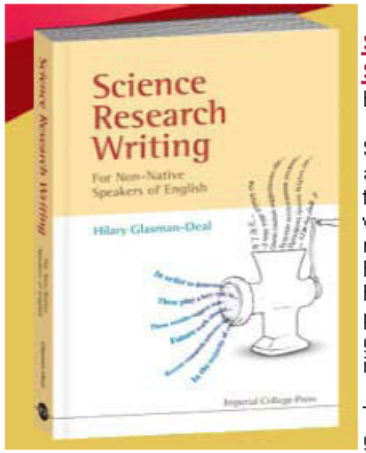

SCIENCE RESEARCH WRITING FOR NON-NATIVE SPEAKERS OF ENGLISH

by **Hilary Glasman-Deal** *(Imperial College London, UK)*

Science writing is much easier than it looks because the structure and language are conventional. The aim of this book is to help the reader discover a template or model for science research writing and then to provide the grammar and vocabulary tools needed to operate that model. It is designed to enable non-native English speakers to write science research for publication in English. The book can also be used by English speakers and is a practical, user-friendly book intended as a fast, do-it-yourself guide for those whose English language proficiency is above intermediate.

The approach is based on material developed from teaching graduate students at Imperial College London and has been extensively piloted. The book guides the reader through the process of writing science research and will also help with writing a Master's or Doctoral thesis in English. There are five units: Introduction, Methodology, Results, Discussion/Conclusion and Abstract. The reader develops a model for each section of the research article through sample texts and exercises; this is followed by a Grammar and Writing Skills section designed to respond to frequently-asked questions as well as a Vocabulary list including examples of how the words and phrases are to be used.

Contents: Introduction: How to Use This Book; How to Write an Introduction; Writing about Methodology; Writing about Results; Writing the Discussion/Conclusion; Writing the Abstract; Appendices.

Readership: Non-native and overseas science, engineering, technology and medical professionals including graduate students, academics, researchers or industrial scientists interested in publishing in English science journals; English language professionals at universities and colleges worldwide (including English-speaking countries) who provide writing support to students and staff whose first language is not English.

272pp Dec 2009
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Scientific Writing Books IV

SCIENCE RESEARCH WRITING FOR NON-NATIVE SPEAKERS OF ENGLISH, by Hilary Glasman-Deal (Imperial College London, UK)

Scientific Writing: Articles I

Posted at http://web.missouri.edu/~glaserr/RG_T_SS10.html

ADVANCED MATERIALS

ESSAY

Whitesides' Group: Writing a Paper**

By *George M. Whitesides**

1. What is a Scientific Paper?

A paper is an organized description of hypotheses, data and conclusions, intended to instruct the reader. Papers are a central part of research. If your research does not generate papers, it might just as well not have been done. "Interesting and unpublished" is equivalent to "non-existent".

Realize that your objective in research is to formulate and test hypotheses, to draw conclusions from these tests, and to teach these conclusions to others. Your objective is not to "collect data".

A paper is not just an archival device for storing a completed research program; it is also a structure for *planning* your research in progress. If you clearly understand the purpose and form of a paper, it can be immensely useful to you in *organizing* and conducting your research. A good outline for the paper is also a good plan for the research program. You should write and rewrite these plans/outlines throughout the course of the research. At the beginning, you will have mostly do *not* agree on the outline, any text is useless. Much of the *time* in writing a paper goes into the text; most of the *thought* goes into the organization of the data and into the analysis. It can be relatively efficient in time to go through several (even many) cycles of an outline before beginning to write text; writing many versions of the full text of a paper is slow.

All writing that I do—papers, reports, proposals (and, of course, slides for seminars)—I do from outlines. I urge you to learn how to use them as well.

2.2. How Should You Construct an Outline?

The classical approach is to start with a blank piece of paper, and write down, in any order, all important ideas that occur to you concerning the paper. Ask yourself the obvious questions: "Why did I do this work?"; "What does it mean?"; "What hypotheses did I mean to test?"; "What ones did I actually test?"; "What were the results? Did the work yield a

Scientific Writing: Articles II

Posted at http://web.missouri.edu/~glaserr/RG_T_SS10.html

AMERICAN
Scientist

FEATURE ARTICLE

The Science of Scientific Writing

If the reader is to grasp what the writer means, the writer must understand what the reader needs

George Gopen, Judith Swan

This article was originally published in the November-December 1990 issue of American Scientist.

Science is often hard to read. Most people assume that its difficulties are born out of necessity, out of the extreme complexity of scientific concepts, data and analysis. We argue here that complexity of thought need not lead to impenetrability of expression; we demonstrate a number of rhetorical principles that can produce clarity in communication without oversimplifying scientific issues. The results are substantive, not merely cosmetic: Improving the quality of writing actually improves the quality of thought.

The fundamental purpose of scientific discourse is not the mere presentation of information and thought, but rather its actual communication. It does not matter how pleased an author might be to have converted all the right data into sentences and paragraphs; it matters only whether a large majority of the reading audience accurately perceives what the author had in mind. Therefore, in order to understand how best to improve writing, we would do well to understand better how readers go about reading. Such an understanding has recently become available through work done in the fields of rhetoric, linguistics and cognitive psychology. It has helped to produce a methodology based on the concept of reader expectations.