

GRANT APPLICATION WRITER'S HANDBOOK, FOURTH EDITION. LIANE REIF-LEHRER. BOSTON: JONES AND BARTLETT PUBLISHERS; 2005. 362 PAGES. SOFTCOVER \$51.95. ISBN 0-763-71642-1.

You can't judge a book by its title. At first glance, one might assume that the *Grant Application Writer's Handbook, Fourth Edition*, is a general guide to preparing grant applications to be submitted to any funding agency. The book's main focus, however, is the preparation of a biomedical-research grant application for submission to the National Institutes of Health (NIH). The target audience is the biomedical researcher seeking research funding.

Liane Reif-Lehrer is a national consultant on the grant application process. As a veteran NIH-funded researcher and NIH study-section member, she has extensive experience in proposal preparation and review. Reif-Lehrer draws on her experience with NIH to guide the reader through the steps of proposal preparation.

The *Grant Application Writer's Handbook, Fourth Edition*, takes its readers through a logical sequence of chapters, starting with basic definitions of a grant and ending with advice for those whose applications are not funded. The book is divided into eight comprehensive parts, each of which is designed to stand alone. Therefore, the book may be read from cover to cover, or the reader may go directly to the chapters that hold advice on specific subjects of interest. A highly detailed table of contents allows quick navigation.

Part I, "Getting Started", is an introduction to grant-seeking that describes common characteristics of a successful grant recipient and the basic skills that a grant seeker needs to develop to ensure success. In addition, definitions are provided for some of the key terms in grant lingo. The author encourages the reader to stay informed of the NIH grant policy and directs the reader to the online NIH Grants Policy Statement. Unfortunately, the uniform resource locator (URL) address provided does not lead to the most recent version of the NIH Grants Policy Statement.

Part II, "Understanding the NIH Review Process", describes a grant application's travels through the NIH review process, beginning with its arrival at the Center for Scientific Review and ending when a

decision is made regarding its fate: funded or not funded. The author challenges grant writers to think about the needs of the grant reviewers as the application is prepared.

Part III, "Parts of the Grant Application", gives an overview of Public Health Service (PHS) Form 398, which is used for NIH research grant submission. The author quotes guidelines from an out-of-date version of the PHS 398 instructions. Following the PHS 398 font type and size requirements given in the book would probably result in a delay in application processing or the return of the application to the applicant without review. Except for the advice on budget preparation and budget justification, skip the chapter, and read the current version of the PHS 398 grant guidelines.

Part IV, "Planning the Research Plan", and Part V, "Writing the Research Plan", offer practical advice on developing, writing, and editing the research proposal. Many of the suggestions offered in the sections could be applied to writing manuscripts, research reports, or proposals to any funding agency.

Part VI, "Submitting and Tracking the Grant Application", can be skipped entirely. The long-awaited electronic grant application submission has arrived, and most of the suggestions in the section are obsolete. For example, advice on keeping proposals bound and labeled and on the address for mailing a grant application to NIH's Center for Scientific Review is no longer needed.

Part VII, "Summary Statements, Rebuttals, and Reviews", and Part VIII, "Some Final Words", offer advice on dealing with rejection from NIH and using critiques from summary statements to improve the application.

In the first sentence of the book's introduction, the author states, "I am omitting many of the details that are likely to change and cause the book to fall into oblivion in too short a time." While the book was in press, NIH released a new version of PHS 398 and instructions. By the time the book reached print, several

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tidbits of information scattered throughout it had become obsolete. Although the author reminds readers not to use the book in place of reading the instructions, she should have avoided references to specific items in PHS 398 and the instructions. A reader who is not familiar with PHS 398 and current guidelines will not know how to pick and choose advice in the book that should be followed or discounted. The first sentence may give the reader the false impression that the book contains only items that are not subject to change, but that is not true. The preparer of an NIH grant application must keep in mind that one misstep in following the NIH guidelines for preparation of PHS 398 can result in a proposal's rejection before it meets the hands of a reviewer. A reader who is not willing to check for updates on each bit of advice presented in this book—an excruciatingly labor-intensive chore—should avoid this book.

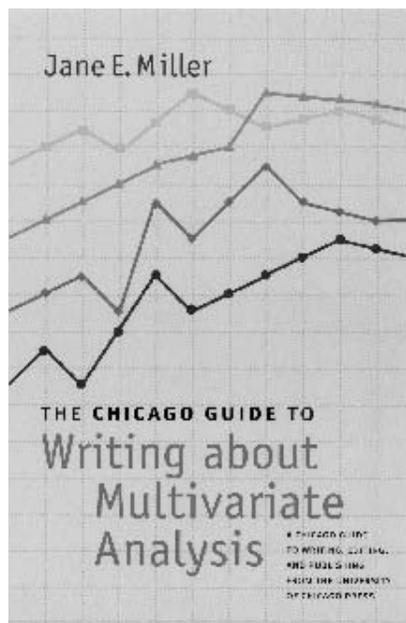
In early 2005, NIH began its transition away from PHS 398 to Form SF424 and electronic submission. The use of the latter form will become mandatory for the submission of all NIH grants by the end of 2007. The new form and transition to

electronic submission will bring about substantial change in the processes required for proposal preparation and submission. As a result, most of the *Grant Application Writer's Handbook, Fourth Edition*, will “fall into oblivion”, as the author puts it. Reif-Lehrer should probably get to work on the fifth edition if she hasn't done so already.

Overall, this book offers some valuable suggestions that could be of use to researchers who have never prepared and submitted an NIH grant application or who have not yet prepared an NIH grant application that was funded. Researchers who prefer reading pages on the Internet to reading a book should skip the *Grant Application Writer's Handbook, Fourth Edition*, and go straight to the NIH Web site where the most up-to-date proposal-preparation guidelines and links to a host of resources can be found. Those who prefer to read a book should focus on general concepts presented and ignore the specifics presented in the book.

Phaedra Yount

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THE CHICAGO GUIDE TO WRITING ABOUT MULTIVARIATE ANALYSIS. JANE E MILLER. CHICAGO: THE UNIVERSITY OF CHICAGO PRESS; 2005. 424 PAGES. HARDCOVER \$65.00; SOFTCOVER \$25.00. ISBN 0-226-52782-4 (HARDCOVER); 0-226-52783-2 (SOFTCOVER).

The title of *The Chicago Guide to Writing About Multivariate Analysis* is somewhat misleading. In the introduction, Jane E Miller specifies that the text is “neither a writing manual nor a statistics book”. Readers probably will already have a solid grasp of expository writing and should be well-versed in ordinary least-squares regression and logistic regression. However, many of the topics covered are applicable to scientific publication in general, particularly to reports that rely on presentation of relatively complex numeric information.

The text begins, appropriately enough, with “Seven Basic Principles”. This 20-page chapter contains information applicable to just about any type of writing. Some of it will seem, as the chapter title indicates, basic, but Miller’s reminders and examples are good refreshers.

For example, the first concept Miller discusses is what she describes as “the W’s”: the who, what, when, and where of expository writing. Scientific writers and editors whose work is directed toward an audience of their peers may assume that their readers will automatically understand the context of their material and will therefore be tempted to omit or to shortchange one or more of the W’s. Miller points out that failure to include the W’s could cause later readers, or those outside the field of specialty, to misunderstand or misinterpret the context of the work. Using a “poor, better, best” rubric that recurs throughout the book, Miller gives helpful examples of the presentation of the W’s. The “poor” examples typically include just the straight facts with no context or description of relevance. The “better” and “best” examples show how the same information can be presented in a manner that includes a description of the importance of the question being considered.

Miller also discusses the pitfalls of too much presentation of that information. Including the who, what, when, and where in every sentence that includes numeric information results in “a truly mind-numbing experience for both writer and reader”. She recommends describing the context no

more than once per paragraph and restating it only if some aspect of it changes.

Other basic principles include the choice of effective examples and analogies, the use of vocabulary appropriate to the readership and the avoidance of unnecessary jargon, and the determination of how numbers should be presented. On the latter point, Miller encourages writers to consider their audience, how much time the audience has to assess the information, and how much precision is required for readers to understand the information. Those factors will assist in deciding whether numbers are best presented in text, tables, or charts.

The checklist at the end of this chapter (and every other main text chapter) will probably be the most useful aspect of the text. Miller uses an engaging, relatively informal tone in her writing and includes extensive explication and detail. The chapters are long, and each is packed with useful information. Those characteristics make for enjoyable reading (to the extent that reading a guide to writing about multivariate analysis can be considered enjoyable) but impede the reader in quickly looking up and finding specific information. The checklists address that problem by restating, in one-sentence summaries, the main points of each chapter and the appropriate supporting information. Readers may want to flag the checklist pages to simplify the use of the book as a writing reference.

Later chapters focus on topics more closely related to multivariate analysis. Although the text is not a statistics textbook, Miller does provide brief descriptions of the statistical concepts presented. These short discussions are helpful reminders for those who may have taken statistics courses but who no longer work daily with such concepts as p values, test statistics, and correlations between independent variables.

Chapters 11 and 12 address the drafting of the specific parts of scientific papers. Chapter 11 covers introductions, conclusions, and abstracts; Chapter 12 addresses data descriptions and methods sections. These chapters both contain information generalizable to an array of scientific writing, but they emphasize factors relevant to

statistical analysis. In a literature review, Miller recommends that writers present statistically significant findings relevant to the question being discussed followed by descriptions of research that contradict the findings. She calls this presentation the GEE (for “generalization, example, exceptions”) technique. Here again, Miller uses the “poor, better, best” presentation to give examples of how this information can be tied together to flow well. The “better” approach groups research that shows similar results; a “poor” presentation is one that discusses each study individually in a rote presentation of findings.

The data and methods chapter covers the factors important to include in a full description of these aspects of a study. Some may find this material basic; to an experienced scientific writer, it seems obvious that information about, say, the characteristics of the sample being examined should be included. However, writers and editors with little experience in writing about statistical analyses will probably appreciate the reminders provided here.

Miller also includes chapters that cover speaking about multivariate analysis and writing for what she calls “applied audiences”—those which are more interested in the question being asked and the answer presented than in the statistical techniques used. Both those chapters emphasize clarity of presentation. The chapter on speaking includes discussion of the effective development and use of slides. It should be required reading for anyone who has

ever been tempted to cut text directly from a written article and paste it onto text-filled slides. (Don’t do it—summarize the salient points into phrases that can be presented in a bulleted list, with six to 10 words per bullet and no more than six bullets per slide, Miller advises.) Importing a number-filled table directly from an article to a slide is another bad idea, Miller indicates. The table will not make much sense without the accompanying text, and it will probably be too small to read.

The extent of the research and thought that went into this work is clear in the wealth of information presented and the extensive reference citations. Although the information presented may seem basic to highly experienced and specialized scientific writers and editors, they might find it helpful to have it all covered in a single, compact text. Generalist writers and editors will probably find it useful in ensuring that their work includes relevant, well-presented information. Although the long chapters and wealth of detail may make it difficult to review a specific concept quickly, the checklist at the end of each chapter will help readers to find information they need for their work quickly if they’re in a hurry.

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