SCIENTIFIC WRITING: EASY WHEN YOU KNOW HOW. JENNIFER PEAT, ELIZABETH ELLIOTT, LOUISE BAUR, AND VICTORIA KEENA. LONDON: BMJ BOOKS; 2002. SOFTCOVER $29.95. ISBN 0-7279-1625-4.

"*Scientific Writing* is a comprehensive handbook that takes you step by step through getting published in the biomedical field: from assembling the material to getting the grammar correct, choosing the journal and submitting the manuscript. Guiding you through the stages of preparing your grotty first draft through to the excellent fourth draft and final document, it gives practical advice in a clear and readable style. Key messages are summarised and boxed, and examples are used throughout." "Contents include: scientific writing, getting started, writing your paper, finishing your paper, journal process, publishing, other types of documents, writing style, grammar, word choice, punctuation, support systems."

Those statements are on the back cover of *Scientific Writing*. Usually, that is to be read as an appetizer and certainly not to be believed. However, in the case of *Scientific Writing*, it provides an apt description.

The book covers the important topics of writing scientific articles and getting them published, and at the same time it is handy, readable, and practical. The authors depict the various phases (for example, "achieving creativity", "typical letters from editors", and "replying to reviewers' comments") and agreements (for example, Consolidated Standards of Reporting Trials [CONSORT], guidelines on authorship, and responsibilities of coauthors and other contributors). They describe usage and rules but also encourage the reader to find his or her own way to write effectively. One of the authors (JP) is a statistician, two (EE and LB) are academic pediatricians and published writers, and the fourth (VK) provides knowledge on accessing information. Together they have broad experience and have written a complete, well-got-up book.

The largest chapter is "Writing Your Paper" (46 of 292 pages; Chapter 4 of 12). Of course, the reader will find guidelines on how to construct an article, including tables, figures, and graphics. However, the authors go further: They emphasize that a figure should be self-explanatory, and they include the numbers of patients "at risk" in an example figure of a survival analysis. They pay attention to ethical approval, as well as to statistics. And they render the service of compiling characteristics of various study designs (everyone should know what a cohort study is, but many use "cohort" as a synonym for any collection of patients).

Four chapters concern writing style, grammar, word choice, and punctuation. The rules are clear, and the reader may enjoy this material while learning from examples about eliminating fog, saying what is meant, creating flow between sentences, writing concisely to achieve brevity and clarity, switching from negative to positive, and removing emotive terms. The authors add their medical experience: "levels" should not be used instead of "concentrations"; and a case is an episode of disease, whereas a patient is admitted to the hospital.

The book is as adequate as indicated on the back page. Novice authors will find the basic rules, such as those related to the topics that can be discussed in a case report, a template for the discussion, and a list of style guidelines. Seasoned scientists may refresh their knowledge of publication policies and when to use commas—and when not to. Narrative reviews are generally accepted as expert opinion, the book states, and do not have to be written as systematic reviews; but the opinions should be based on the best evidence available, and the box "Sequential steps for writing a narrative review" contains the step "decide on a literature strategy".

Although not mentioned as a target audience by the authors, various kinds of (novice) editors can improve or update their skills with this book: it covers embargo, the Ingelfinger rule, fast tracking, and early release.

The book discusses choosing a title, an everlasting challenge. Attractiveness is important, but the basic function of a title is to describe the content of a paper succinctly. A box shows the characteristics of an effective title: it identifies the main issue of the paper; begins with the subject of the paper; is accurate, unambiguous, specific, and complete; does not contain abbreviations; and attracts readers. As in the rest of the book, examples are given of how to change an existing title into a better one.

The authors explain how to construct

a framework for scientific documents and for the paragraphs within so that writing becomes orderly and structured. They are not pedantic about what is right and what is wrong but explain the rules that work best. Included are recent references, useful Web sites, and an accurate index.

The subtitle "Easy When You Know How" sets the pleasant tone of this paperback: down to earth. As the authors state in the introduction: "Scientific writing is about using words correctly and finding a precise way to explain what you did, what you found, and why it matters." "Once you can write what you mean, put your content in the correct order, and make your documents clear and pleasurable for others to read, you can consider yourself an expert writer."

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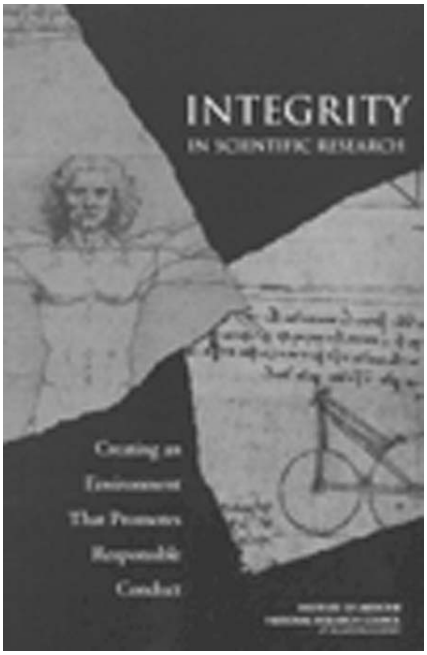

INTEGRITY IN SCIENTIFIC RESEARCH: CREATING AN ENVIRONMENT THAT PROMOTES RESPONSIBLE CONDUCT. REPORT PREPARED BY THE COMMITTEE ON ASSESSING INTEGRITY IN RESEARCH ENVIRONMENTS, BOARD ON HEALTH SCIENCES POLICY AND DIVISION OF EARTH AND LIFE STUDIES, INSTITUTE OF MEDICINE, NATIONAL RESEARCH COUNCIL OF THE NATIONAL ACADEMIES. WASHINGTON, DC: THE NATIONAL ACADEMIES PRESS (*WWW.NAP.EDU*); 2003. 168 PP. SOFTCOVER $10.59. ISBN 0-309-08479-2.

Three premises are fundamental to science in America: that knowledge and advantages derived from scientific research and technologic advances should benefit society, that society should bear the cost of scientific discovery, and that scientists and their institutions are accountable to society for the integrity of their work. Misconduct in science undermines humankind's search for knowledge and misappropriates public funds. Misconduct in the biomedical sciences is particularly troubling because in addition it may affect the public health. Perhaps that is why, when the Office of Research Integrity (ORI) sought a means to track the state of integrity in the research environment, it turned to the Institute of Medicine (IOM) for recommendations.

After negligence and misconduct in science made headlines during the 1980s, much time, effort, and government funding were spent to arrive at a generally acceptable definition of research misconduct and at methods for investigating allegations of misconduct. Creating ORI in 1992, the government established oversight to ensure responsible conduct of research. ORI is charged to monitor institutional investigations of research misconduct and facilitate responsible research through educational, preventive, and regulatory activities. How those charges are implemented remains to be seen. This book may guide their implementation.

At ORI's request, IOM appointed the Committee on Assessing Integrity in Research Environments in January 2001 to define the concepts "research integrity" and "research environment", identify elements of the research environment that promote research integrity and indicate how they might be measured, and suggest methods for collecting the data and appropriate outcome measures. The committee was to recommend ways for research institutions, government agencies, scientific societies, and others to adopt and implement strategies to promote integrity in research and was to hold a public meeting to discuss its findings.

Drawing on a wide array of resources, the committee arrived at overarching conclusions: Attention to issues of integrity in scientific research is important to everyone involved in or affected by the scientific enterprise. Education in the responsible conduct of research is critical to promoting integrity but only if it is done well—otherwise, it is likely to have little or no effect. There is no evidence to support any one approach to fostering or assessing and improving integrity in the research environment. Policies and procedures promoting integrity are necessary but do not ensure responsible conduct of research. Self-assessment by research institutions is more promising than a regulatory approach, but no established measures for assessing integrity exist. Recognizing that it could draw no definitive conclusions about which elements of the research environment promote integrity, the committee relied on general theories of organizational behavior, ethical decision-making, and adult learning to formulate its recommendations, which are as follows:

1. Funding agencies [and ORI] should establish research grant programs to

identify, measure, and assess those factors that influence integrity in research, seeking new approaches to monitoring and evaluating integrity and defining elements of the research environment that promote research integrity across disciplines and institutions.

2. Each research institution should develop and implement a comprehensive program designed to promote integrity in research, using multiple approaches adapted to the specific environments within each institution. Federal agencies and private foundations should fund programs that include effective leadership, policies and procedures, education, and assessment of efforts devoted to fostering research integrity.

3. Institutions should implement effective educational programs that enhance the responsible conduct of research. Guided by principles of adult learning and built to develop abilities that foster research integrity, programs should be integral to the context of research education and should be led by faculty who are active in research related to their trainees' research.

4. Research institutions should evaluate and enhance the integrity of their research environments using . . . self-assessment and external peer review [at all levels of the institution] in an ongoing process that provides input for continuous quality improvement. External peer review is essential to ensure credibility and increase the public's confidence.

5. Institutional self-assessment of integrity . . . should be [integrated into] existing accreditation processes whenever possible. These include organizations that accredit institutions of higher education and professional accreditation organizations. Federal and private agencies should fund the development, validation, and assessment of efficacy of self-assessment instruments for research institutions to adopt.

6. ORI should . . . maintain a public database of institutions that are actively pursuing or employing institutional self-assessment and external peer review of integrity in research, initially including institutions that receive funding for or are developing self-assessment instruments.

The committee concludes that "the majority of these approaches and methods can and should be initiated as soon as feasible and administered by research institutions themselves so that government regulation will not be required."

This inexpensive volume is of interest to all research administrators and journal editors and is an important document for anyone who influences the responsible conduct of research, whether by mentoring, teaching, supervising, or assisting in any aspect of scientific research and reporting. Although it has many of the shortcomings of any committee report, it is well constructed. The chapter "The Research Environment and Its Impact on Integrity in Research" concisely describes the culture of science. The chapter "Promoting Integrity in Research Through Education" is a primer for creating a learning environment to foster research integrity that includes teaching and assessment methods and a tutorial on principles of adult learning. A timeline of events leading from the conception of ORI to the present provides a context for the commission of this report. The report is marred by an uneven bibliography of additional resources. The section "Responsible Scientific Conduct", for example, is missing writings of many of the eminent authors and reviewers of the report, and the section "Writing" includes the long-out-of-print *Scientific Writing for Graduate Students*, published by the Council of Biology Editors (CBE) in 1968, but does not include the recent CBE publication *How to Teach Scientific Communication*, by F Peter Woodford; the classic *Writing and Publishing in Medicine*, by Edward J Huth; or any of several other essential scientific and biomedical writing texts. Nonetheless, the report is of substantial importance to the constituency of the Council of Science Editors.

Susan Eastwood

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