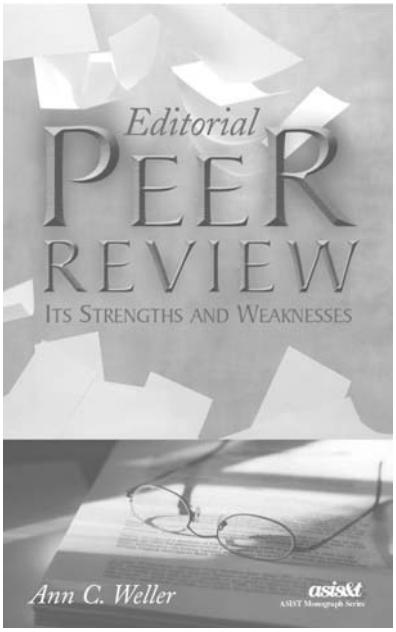


Editorial Peer Review: Its Strengths and Weaknesses. Ann C Weller. Medford, NJ: Information Today, Inc; 2001. 342 pages. Hardcover $44.50. ISBN 1-57387-100-1. ASIST Monograph Series.

Ann Weller, associate professor and deputy director of the Library of the Health Sciences, University of Illinois at Chicago, first became interested in peer review in the early 1980s, when she was head of the reference department at the American Medical Association Library and worked with the editorial staff of the *Journal of the American Medical Association* (*JAMA*). This early interest led to continuing research on peer review, including studies presented at two of the international peer-review congresses cosponsored by *JAMA*.

The purpose of *Editorial Peer Review* is to "conduct a systematic review of published studies on the editorial peer review process" and determine what peer review adds, whether it's worth the time and money it costs, and what might be modified or eliminated as peer review moves into the electronic environment. The intended audience is "anyone interested in the scholarly communication process", especially those who directly influence the publication process.

In her monograph, Weller looks at English-language studies published from 1945 to 1997. She begins with a chapter on the evolution of peer review and, after a consideration of rejected manuscripts and their influence on the scientific communication process and the publication of high-quality material, examines questions about the roles of editors and editorial boards, authors, and reviewers in the peer-review process. The penultimate chapter addresses peer review in the electronic environment, and the book concludes with suggestions for new models to help enhance scientific communication today and in the future.

Each chapter follows a similar pattern: (1) introduction, (2) several research questions, (3) a systematic review of studies that address the questions, and (4) the findings and limitations of the studies discussed, with conclusions that might lead to guidelines for improving the peer-review process. To illustrate, in the chapter on the role of reviewers, the research questions were these: (1) What is known about reviewer characteristics—in particular, the time spent by reviewers and their professional status? (2) What is known about the overall quality of reviewers' reports? (3) Have any studies examined reviewers' reports for content? Have any studies linked the value of reviewers' reports to the value of published articles?

Weller drew on almost 1500 articles in answering her research questions. She compares her method of amassing these articles with that of Sherlock Holmes: She used online databases to compile the basis of this collection of articles and added to it by tracking down relevant citations in individual articles. (In the process, librarian that she is, she also created her own database of close to 300 articles that kept showing up but that were "not relevant" to the research!)

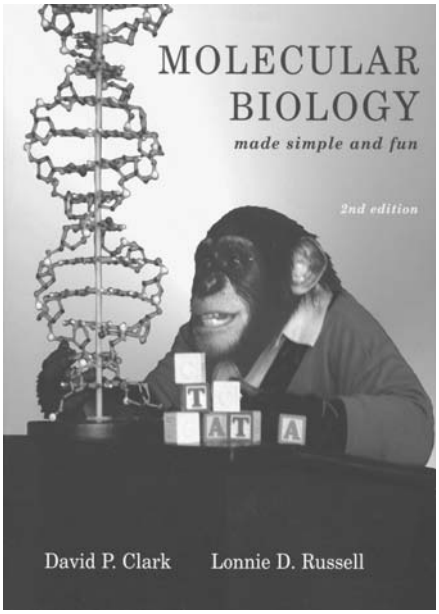
In each chapter, Weller uses tables to provide readily accessible summaries. Those tables alone offer helpful information across disciplines—and also within particular fields—and provide ample basis for further research. For example, in the introductory chapter, Weller provides a large table with information on editors' descriptions of their journals' editorial peer-review processes. This table includes information on rejection rates, percentages of manuscripts rejected without peer review (and the reasons why), and use of blind or double-blind review for journals in medicine and health, business and manufacturing, communication, dentistry, history, library science, nursing, political science, psychology, science, and sociology. Topics reviewed in other tables in the book include editors' reasons for rejection of manuscripts, journal rejection rates by discipline, changes in the average number of authors of medical articles, authors' reasons for choosing particular journals, workload of reviewers, authors' perception of and experience with the peer-review process, the size of journals' editorial boards and board members' average terms and institutional affiliations, sources of reviewer bias, use of statistical review, types of statistical errors most common in published studies, and ways in which peer review is changing in the electronic environment.

By collecting the available literature on peer review and using it to analyze the roles and concerns of authors, editors, and reviewers, Weller has provided not only a good overview of peer review and how it has evolved but also inspiration for others to don a Sherlock Holmes hat and undertake further study. Since Weller's citations were collected, two more international peer-review conferences have been held—adding yet more to the research in the field—and some of the trends she discusses as being in the initial phases (such as listing authors' contributions and naming a guarantor for a study) are now more widely used. There is also more experience with how peer review is affected by the electronic environment as more journals are publishing online first, offering online versions that differ from print versions, and providing supplementary material online.

Weller concludes, as those who study peer review often do, that although peer review is not perfect, it is valuable and needs to be preserved, although more in-depth research is needed and the online environment may require new models to address issues of speed and anonymity. The next international peer-review congress is scheduled for 2005. If journals could agree to share data on even some of the questions related to peer review that Weller has raised—and, better yet, if these data could be made available on some public site where journal editors could periodically update the information for their own journals—what a terrific resource we would have! This book has brought together a wealth of information that makes us eager for more.

Cheryl Iverson

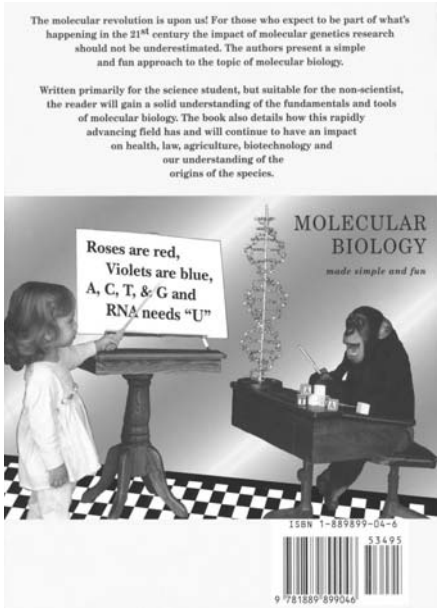
CHERYL IVERSON *is the managing editor of the nine* Archives *Journals published by the American Medical Association and is the chair of the committee that is working on the 10th edition of the* AMA Manual of Style.



MOLECULAR BIOLOGY MADE SIMPLE AND FUN. 2ND ED. DAVID P CLARK AND LONNIE D RUSSELL. ST. LOUIS: CACHE RIVER PRESS; 2000. 486 PAGES. SOFTCOVER $34.00. ISBN 1-889899-04-6.

The title of this book is probably an oxymoron to many, but authors David P Clark and Lonnie D Russell worked hard to make the information they present interesting and accessible to a wide range of readers. Clark, a microbiologist, and Russell, a physiologist, describe their writing style as a collaboration in which one of them "was an absolute dummy" in molecular genetics who bullied the other, "a whiz kid molecular geneticist", into explaining things clearly and simply. Their goal was to present difficult ideas so that the uninformed could learn enough of the basics to "understand a scientific seminar in molecular biology". As an editor relatively new to cancer research, I was the perfect audience. I wanted a resource with an overview of the subject that was less technical than standard textbooks. Now, after having read the first 12 chapters, I am gratified that the topic has become less daunting. (Tragically, Lonnie Russell drowned last year while swimming in the ocean off the coast of Brazil, where he was doing research, so future editions are in doubt.)

The 28 chapters are grouped very loosely by topic, although Clark and Russell consider each one to be generally able to stand alone. In the first four, the authors explain the importance of molecular biology, describe the use of bacteria in research, and cover the basics of genetics and heredity. In the next three, they present DNA replication, transcription, proteins, and translation; these 28 pages are densely packed, but the concepts are clear. Two chapters deal with gene transfer in bacteria and basic DNA-handling techniques. Three more cover the genetics of higher organisms, genetic mutations, and inherited human disease. In a 26-page chapter on cancer and aging, the authors discuss an enormous range of subjects, including somatic mutations, oncogenes and proto-



oncogenes (*ras* and *Myc*), tumor-suppressor genes (*p53*), inherited susceptibility, cancer-causing viruses, gene therapy, telomeres, apoptosis, *bcl-2*, and mitochondria. Four chapters describe the biotechnology of transgenic plants and animals and such common laboratory techniques as gel electrophoresis, DNA footprinting, radioactive and nonradioactive labeling, DNA and RNA hybridization, Southern, Northern, and Western blotting, fluorescence in situ hybridization, and the polymerase chain reaction. A brief overview of the forensic use of DNA technology follows, focusing on "what lawyers must know to try a case". The authors introduce what they call "gene creatures"—viruses, viroids, plasmids, transposons, retransposons, retrons, junk DNA, and pseudogenes—and they discuss biologic warfare at the bacterial and human levels and the body's immune defense mechanisms. Near the end of the book are several chapters on molecular evolution; taxonomy; history, including descriptions of famous laboratory experiments; and several recent advances, including the cloning of Dolly, protein splicing, and the use of molecular engineering of leptin and other substances for treating obesity.

The book concludes with a self-test—of sorts—for readers to see whether they can decipher the lingo of a typical molecular-biology seminar. Here the authors describe their invented discovery of the imaginin (Img) protein and their cloning of the *img* gene. The "seminar" explores their hypothesis that the imaginin protein and gene are needed to stimulate the imagination. Each page is divided into two columns, one called *"What Was Said"*, and the other, *"What Was Meant: (simple & fun version)"*. Here's an excerpt: *What Was Said*: "2-D PAGE showed the presence of a 65 kd polypeptide that was present in the brain of normal mice, but was found to be absent in brain tissue from dull mice. The protein was designated 'imaginin.'" *What Was Meant:* "Proteins from living tissues of dull mice and normal mice were analyzed by polyacrylamide gel electrophoresis (PAGE; pg. 235). In 2-D PAGE, proteins are separated by size in one direction and then by charge in the other direction (2-D = 2 dimensions) on a square gel. A 65 kd (65 kilodaltons; dalton = unit of molecular weight) protein was only present in normal mice and was found only in the brain. The protein was named imaginin after a John Lennon song that someone remembered from their old 'hippie' days."

The book contains a number of elements that help to justify the "Simple and Fun" of its title and give the book its charm. Important terms are highlighted in the text, defined in the margin, and included later in a 20-page glossary. The text is informal and sprinkled with corny jokes and asides. The layout has liberal white space, effective spot color, and distinctive two-color, *USA Today*–style figures in the form of clever—and sometimes goofy—mnemonics and illustrations are interspersed in the text. The sigma subunit, for example, is depicted as a snorting dragon with clawed feet planted firmly on the base sequences of a gene's promoter region.

Molecular Biology Made Simple and Fun has been widely used in high schools and colleges and even by the National Institutes of Health. It was a welcome find for me and should be for anyone else needing an introduction to the basics of molecular biology or wanting just a quick review.

Gayle Nesom

GAYLE NESOM *is an editor in the Department of Scientific Publications at The University of Texas M D Anderson Cancer Center.*