

BOOK REVIEW

Scientific Integrity: Text and Cases in Responsible Conduct of Research. Third edition. Francis L. Macrina. 2005. Washington, DC: ASM Press. 402 pages.

Scientific Integrity: Text and Cases in Responsible Conduct of Research (third edition) provides a text for graduate and post-graduate courses and seminars on responsible conduct of research (RCR). This textbook has been popular, and many institutions have and continue to use it as their RCR “bible,” including my own institution, the University of Maryland, Baltimore.

As the author points out, our training programs in the medical, biological, physical, psychological, or social sciences offer courses for mastery of knowledge and technical skills unique to their discipline. However, such technical courses often lack sufficient instruction in the values of science and ethical responsibilities of scientists to their fellow scientists and to society as a whole. This book attempts to make scientists aware of their responsibilities and how to manage them. The book provides tools, approaches, and insights that scientists can use to seek and protect the truth and to minimize the many influences that weaken the foundation of trust and honesty on which science is based.

The 11 chapter titles illustrate the broad sweep of ethical issues and associated regulatory policies that impact researchers in the 21st century. Included are chapters on Ethics and the Scientist, Mentoring, Authorship and Peer Review, and separate chapters on Biomedical Experimentation in Humans and in Animals. The chapter on Managing Competing Interests is particularly strong; it explores conflict of effort and conflict of conscience, which are pervasive but much more subtle than the more overt conflict of financial and academic interests, which have attracted extensive attention by the press. The chapters on Collaborative Research, Ownership of Data and Intellectual Property, Genetic Technology and Scientific Integrity, and Scientific Record Keeping completes the remarkably diverse array of current topics with which scientists must contend. New material appearing in the third edition of *Scientific Integrity* include the Health Insurance Portability Act (HIPAA), the Digital Millennium Copy-

right Act, NIH data-sharing policy, publication policies that address biodefense issues, open access publication, electronic record keeping, and trends in mentor–trainee relationships.

After each chapter, the author presents four, one-sentence discussion questions based on the chapter, followed by 10 case histories illustrating realistic problems encountered in medical research. The four discussion questions are designed for classroom discussion or for writing assignments; therefore, none have published “answers.” The 10 case histories embody the key strength of the book. They seem eerily familiar, because most scientists have personally encountered a number of them. Up-to-date references and internet resources flesh out each chapter. The book ends with six appendices, consisting of student exercises, Standards for Conduct of Research at the NIH, sample protocols for human and animal experimentation, an example of a US Patent, and instructions for keeping laboratory notebooks. As a bonus, the print edition is associated with a free website (www.scientificintegrity.net), which provides a collection of online resources verified and updated regularly by Dr. Macrina, who has taught scientific integrity for 18 years at Virginia Commonwealth University and at other institutions.

In conclusion, the third edition of *Scientific Integrity* satisfies a critical need of the scientific community. My few recommendations for improvement in the fourth edition are that the author shortens the overly legalistic HIPAA section and adds sections on the ethics of international research and the Belmont Report to the chapter on Experiments in Humans. Otherwise, the scope of the text is concise and inclusive. New material has been added to this third edition to ensure that contemporary issues at the interface of science and ethics are addressed. The core topic material and tools for interactive learning make this text a good choice for courses in RCR and as a reference for all scientists who wish to conduct research ethically.

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