The Ethical Chemist seeks to provide a teaching resource focused on scientific and professional ethics for chemistry faculty, graduate, and undergraduate students. This small (112 page) five-chapter book opens with a sequence of four brief chapters, representing a total of 26 pages that present the basis of ethics, morals, and ethical theory (chapter 2); a discussion of professions and professional codes, the practice of science, and scientific ethics (chapter 3); a chapter outlining a possible approach to ethical problem solving (chapter 4). It concludes with a lengthy chapter (79 pages) that consists of 49 brief case studies covering a wide range of scenarios that students are likely to encounter in the classroom or the research lab.

The opening chapters on ethical theory, professionalism, and ethical problem solving distinguish Kovac's book from Francis Macrina's Scientific Integrity (1) and The Committee on Science, Engineering, and Public Policy's (COSEPUP) On Being a Scientist (2) and represent a potentially useful contribution. However, I found the discussion in these chapters choppy and the material somewhat disjointed from the remainder of the book. I believe that these introductory chapters would be more useful if followed by a series of reflective exercises that would assist students in understanding the relevance of the discussion of ethical theory to them as students and future chemical professionals.

The bulk of the book (chapter 5) consists of a series of brief cases focused primarily on academic class work and on academic research as practiced in a traditional chemistry research group in which each student works alone on a separate research problem and is guided by one primary faculty research mentor. Since Kovac indicates in the preface that the original text was intended to be self-contained and for the instruction of senior undergraduates or beginning graduate students, it is disappointing that these case studies are not preceded by an introduction to the relevant normative practices and/or issues as younger students are not likely to be familiar with the professional practices of authorship, peer review, intellectual property including patents, etc. Noteworthy is the unique approach taken in the presentation of the cases. Kovac presents the scenario in most chapters from the viewpoints of the various individuals involved in the particular case, for example, the undergraduate student, the graduate student, postdoctoral student, and/or the faculty mentor. In addition, each case closes with a commentary aimed at helping students identify the key issues involved in the case. The majority of cases in The Ethical Chemist are thoughtful and cover the major issues undergraduate student researchers are likely to face in academic research including lab safety, plagiarism, confidentiality, authorship, allocation of credit, record keeping, data selection and data treatment, and conflict of interest. However, a number of issues including human subjects, the use of animals in biomedical research, and the relationship of chemical research to society (responsibility as chemist and citizen) appear to have been overlooked. Also, disappointing is the failure of the text to consider issues unique to interdisciplinary research, team-based research, and issues relevant to the increasing number of foreign born students studying in our universities.

Given that the text doesn't present background information on relevant fundamental practices and professional issues within its pages, the bibliography provided at the end of the text is underwhelming at best. It must also be noted that the majority of the references in the bibliography are from the 1980s and 1990s. The reference to Macrina's text is outdated and incorrect: a second edition was published in 2000 (1). Also disappointing is Kovac's failure to include in the bibliography any of the excellent Web resources now available for students and practitioners on ethics in science and engineering practices, including the On-Line Ethics Center for Engineering & Science (3), the Web page for the Office of Research Integrity (4), or Sigma Xi's The Responsible Researcher (5). Web resources are extremely important as students increasingly turn to the world wide web as a bibliographic resource.

As a supplementary reference for courses in scientific ethics, I would certainly include Kovac's text on the reading list. However, due to the failure of the text to provide much needed background information on professional practices in science, the limited breadth of issues represented by the case studies, the dated view of the practice of science, and the limited bibliography, I have reservations about recommending it for use as the primary text for a course on ethics and professionalism in chemistry at either the undergraduate or graduate level.

Literature Cited


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