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Book Review: *Doing Science* by Ivan Valiela

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Doing Science

Ivan Valiela, Oxford University Press, 198 Madison Ave., New York, NY 10016. 2001. 294 p. \$39.50. ISBN 0-19-513413-3.

Science is moving forward at a dizzying pace and more than 90% of the scientists who ever lived are alive today. The number of abstracts published in *Chemical Abstracts* was 1 million in the period from 1907 to 1937, the next million was published in the period from 1938 through 1956, and the next million published in 1957 to 1958. These are several facts that the author gives to help the reader understand why we scientists have to improve our ability to communicate science to a nonscientific audience. The purpose of this book is to "cover the essentials of what practicing scientists need to know about, (1) asking, (2) testing, and (3) communicating results about a scientific question." This book covers all aspects of science from asking questions to presenting the results in both written and oral forms. The last chapter of the book covers perceptions and criticisms of science and presents a summary of why the scientific community is often mistrusted. In many ways this chapter presents the case for why it is important to conduct science in a responsible manner that creates trust among the scientific and nonscientific community. I would urge all readers to start with this chapter because it causes the reader to place the information of *Doing Science* in context.

The natural reaction among practicing scientists would be that this is a book for undergraduate and graduate students to help them learn the scientific process. However, I found

that there were a number of hints throughout the book that would benefit all scientists. There are a number of anecdotes and examples from scientific history that are helpful in illustrating the different points within each chapter. These illustrations cover a wide range of scientific disciplines that demonstrate the universal nature of how we approach science and the critical need for good science, regardless of the field. The reader should not treat this book as the definitive authority on all of the topics (e.g., statistics, graphics, or writing), but in the context of how these are critical components in the scientific process. There are some interesting insights on the process of writing a paper to handling peer reviews and the need to be clear in our writing.

The book is extremely well written and I would recommend reading by advanced undergraduates who are interested in

pursuing a career in science and by graduate students as they begin to develop their research projects. All of us need to look at these examples to help us understand the reason why science does not exist only for those of us in the scientific community but that there is an audience that is concerned about what science does and how it relates to their lives. *Doing Science* would serve as a good text for capstone courses in many disciplines or as supplementary reading for senior research projects.

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