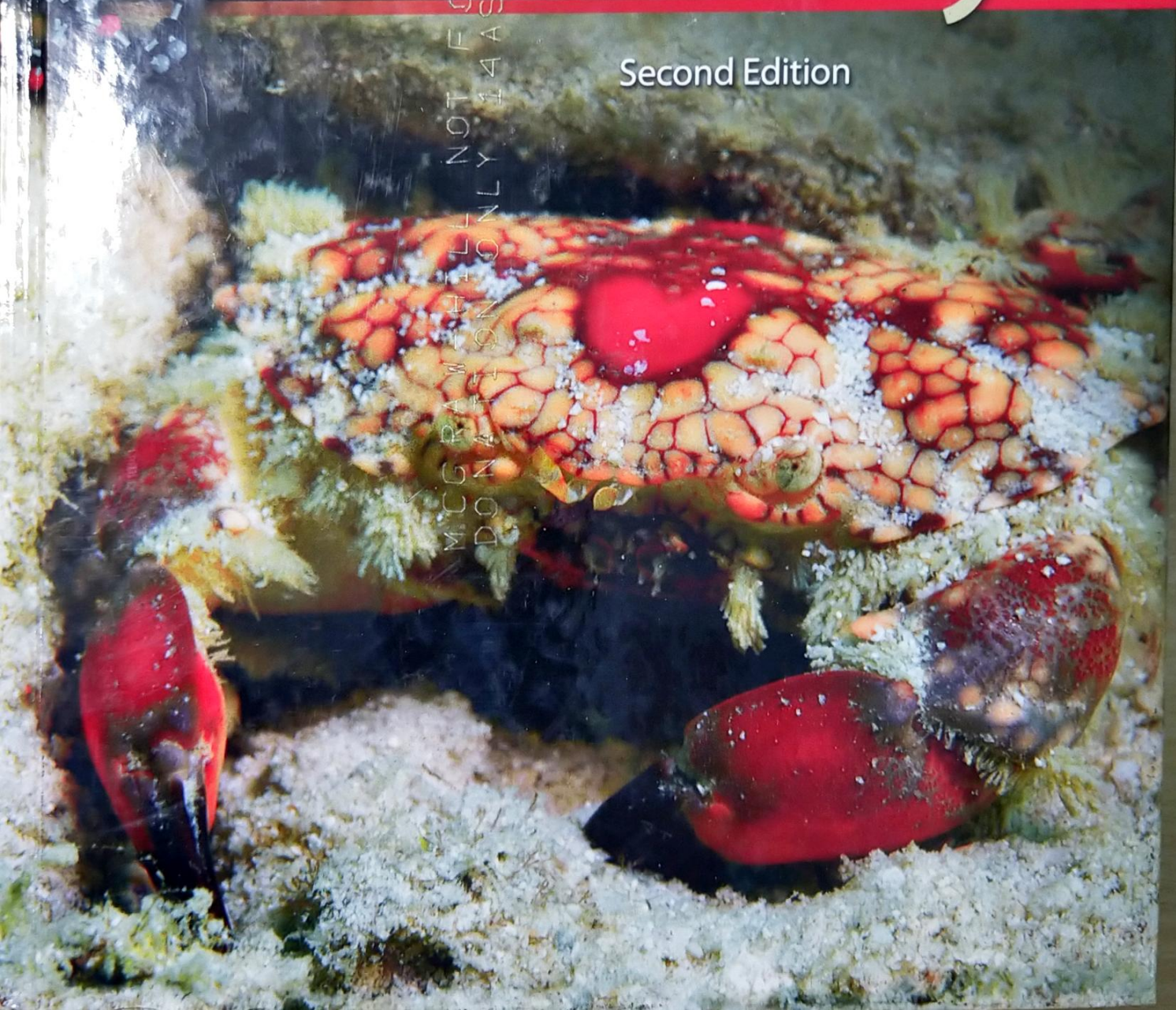


Janice Gorzynski Smith

Organic Chemistry

Second Edition



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About the Author



Janice Gorzynski Smith was born in Schenectady, New York, and grew up following the Yankees, listening to the Beatles, and water skiing on Sacandaga Reservoir. She became interested in chemistry in high school, and went on to major in chemistry at Cornell University where she received an A.B. degree *summa cum laude*. Jan earned a Ph.D. in Organic Chemistry from Harvard University under the direction of Nobel Laureate E. J. Corey, and she also spent a year as a National Science Foundation National Needs Postdoctoral Fellow at Harvard. During her tenure with the Corey group she completed the total synthesis of the plant growth hormone gibberellic acid.

Following her postdoctoral work Jan joined the faculty of Mount Holyoke College where she was employed for 21 years. During this time she was active in teaching organic chemistry lecture and lab courses, conducting a research program in organic synthesis, and serving as department chair. Her organic chemistry class was named one of Mount Holyoke's "Don't-miss courses" in a survey by *Boston* magazine. After spending two sabbaticals amidst the natural beauty and diversity in Hawai'i in the 1990s, Jan and her family moved there permanently in 2000. She is currently a faculty member at the University of Hawai'i at Mānoa, where she teaches both the one- and two-semester organic chemistry lecture and lab courses, and serves as the faculty advisor to the student affiliate chapter of the American Chemical Society. In 2003, she received the Chancellor's Citation for Meritorious Teaching.

Jan resides in Hawai'i with her husband Dan, an emergency medicine physician. She has four children: Matthew and Zachary, age 12 (margin photo on page 164); Jenna, a 2006 graduate of the University of Hawai'i at Mānoa; and Erin, who is a 2006 graduate of Brown University School of Medicine and co-author of the *Student Study Guide/Solutions Manual* for this text. When not teaching, writing, or enjoying her family, Jan bikes, hikes, snorkels, and scuba dives in sunny Hawai'i, and time permitting, enjoys travel and Hawai'ian quilting.

Foreword

Students entering an introductory Organic Chemistry course often do so with mixed feelings. On the one hand, they are happy to have completed their first semester or year of studies in a science curriculum. On the other hand, they are fearful of what lies ahead in a course that is often considered to be one of the most challenging an undergraduate will take. Many of these students aspire to the practice of healthcare; others are primarily interested in scientific research. Even those who have performed well in the classroom up to this point in their academic careers may worry about what lies ahead in Organic Chemistry. As a person who has spent his career studying this science, I cannot resist the temptation to explain my love of the subject and to allay any such fears.

I must start with the fact that Organic Chemistry is the fundamental language of life, since all life involves organic molecules, their interactions, and transformations. It provides a firm foundation for biology and medicine and the tools to develop new medicines and therapies. Although Organic Chemistry is rich in information, it also conforms to a set of principles and an inner logic that is stunningly beautiful to those who know the subject. The actors of organic chemistry (molecules) and their behavior (reactions) can be described by a powerful and beautiful graphical language, consisting of two- and three-dimensional chemical formulas that express the atoms, bonds, electrons, charges, and geometries that characterize their structures. Indeed, this formula notation is so powerful that a trained organic chemist can tell at a glance much about the chemistry and reactivity of a molecule and even how it might be made from simpler substances.

Organic Chemistry appealed to me as an undergraduate because of the beauty of organic molecules and their relevance to human health. The logic and order in the behavior of these molecules stirred my curiosity. As a boy, I had dreamed of someday building things like radios or cars or airplanes. Organic Chemistry offered me the opportunity to construct equally amazing things, albeit on a much smaller scale, that could function to stop infections, cure diseases, and make life better.

Over the years, I have worked with more than one hundred students pursuing Ph.D.'s in Organic Chemistry. The author of this text is one of them. Many of these students are now university professors who maintain their own research labs. An even larger number are research scientists working in the pharmaceutical and chemical industry. Dr. Smith, however, while trained to be a researcher in my lab, decided to direct her passion and energy to teaching. In her 27 years on the faculty, first at Mount Holyoke and now the University of Hawai'i at Mānoa, she has received numerous accolades for her outstanding teaching. This book is a compilation of the methods and notes that she has evolved over those years.

In reading a prepublication draft of the first edition of *Organic Chemistry*, I was impressed by how clearly and efficiently she has presented the material. It is obvious that, through her interaction with thousands of students, she has developed an approach that provides just the right amount of direction needed to understand the concepts. She also has integrated biological applications in such a way that they are neither separate nor unrelated to the core topics. I believe that Dr. Smith's book has made Organic Chemistry more accessible to students and has allowed them to sense the many fascinating aspects of Organic Chemistry that caught my eye years ago.

I would like to congratulate Dr. Smith on this book. To cover in one concise text so many varied aspects of Organic Chemistry is a major achievement.

E. J. Corey
Harvard University

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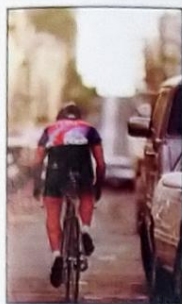
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