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Rene Fester Kratz, PhD
Author of Molecular & Cell Biology For Dummies

Botany FOR DUMMIES®

by René Fester Kratz, PhD
Biology professor, Everett Community College,
Everett, Washington

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About the Author

René Fester Kratz, Ph.D., grew up near the ocean in Rhode Island. From a young age, she wanted to be a teacher (because she loved her teachers at school) and a biologist (because her dad was one). She graduated from Warwick Veterans Memorial High School and then went on to major in biology at Boston University. As she studied biology at BU, René was most interested by the stories about plants, fungi, and microbes — organisms that are traditionally studied under the umbrella of botany. After René graduated with a B.A. in Biology from BU, she worked for two years in the Department of Botany at the University of Massachusetts in Amherst and then went on to get an M.S. and Ph.D. in botany from the University of Washington. At UW, René studied reproductive onset in *Acetabularia acetabulum,* a marine green alga that grows as single cells big enough to pick up with your fingers. When they enter reproduction, the cells of *A. acetabulum* form a flat disk or cup-shaped structure at the top, earning the alga the nickname of "The Mermaid's Wineglass."

René currently teaches biology and general science classes at Everett Community College in Everett, Washington. René spends most of her time introducing students to the wonders of cells and microbes as she teaches cellular biology and microbiology, but she's never forgotten her love of plants. René also has a strong interest in science education and science literacy for everyone. As a member of the North Cascades and Olympic Science Partnership, she helped create inquiry-based science courses for future teachers that are based on research on human learning. René loves teaching these courses because they make science accessible for all kinds of people. In the summer, René enjoys working with K–12 teachers on the improvement of science education in the public schools. René also enjoys writing about science and is the author of *Molecular & Cell Biology For Dummies, Biology For Dummies,* 2nd Edition, and *EZ Microbiology*.

René loves living in the Pacific Northwest because she is near the ocean and her daffodils start blooming in February (when her family back East is still shoveling snow). She doesn't mind the rain and thinks the San Juan Islands are one of the most beautiful places on earth. Her husband, two sons, and two very bad dogs help her remember what is truly important, and her "sisters" help keep her sane. René loves to scrapbook, quilt, stitch, garden, and read.

Dedication

To the people who got me excited about plants and fungi: Drs. Gillian Cooper-Driver, Richard B. Primack, Walt Halperin, Fayla Schwartz, and Elizabeth VanVolkenburgh. And to my sister, Alyson, who helped me with my first plant collection when I was an undergrad.

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Introduction

Everybody's talking about green these days. Green technology, green energy, green lifestyles. It's no accident that the word green has come to symbolize a healthy world and sustainable habits. People use the word green because it ties into visions of a green and growing world, lush with forests and fields of plants. This book is about the organisms that form the foundation of that green vision — the plants that surround us, support us, and make your world beautiful.

About This Book

Botany For Dummies is an introduction to the world of plants and their importance to the rest of life on earth. My goal is to present the concepts of plant biology in a clear and straightforward way, while I help you relate the science to your everyday life. I include lots of pictures of the processes, structures, and life cycles that you'd typically encounter in an introductory course in botany.

Botany is the study of plants, which covers a wide range of subjects, including their structure, function, patterns of inheritance, diversity, and importance to humans. I hope you'll be as surprised and intrigued as I was when I first began to study botany and realized that the seemingly simple world of plants was actually pulsing with life, mystery, and beauty.

Conventions Used in This Book

In order to explain things as clearly as possible, I keep scientific jargon to a minimum and present information in straightforward style. I break dense information into main concepts and divide complicated processes into series of steps.

To help you find your way through the subjects in this book, I use the following style conventions:

- *Italic* is used for emphasis and to highlight new words or terms that are defined in the text.
- **Boldface** is used to indicate key words in bulleted lists or the action parts of numbered steps.