Statistical reasoning and modeling are of critical importance to modern biology. This textbook introduces fundamental concepts from probability and statistics which will pave the way for the student of biology to become a well-rounded scientist. No previous study of probability or statistics is assumed. Calculus topics are not used extensively in this book, though some integration and differentiation are expected. The calculus prerequisite is primarily intended to assure a certain level of mathematical maturity.

This book puts emphasis on examples, which are presented to motivate the theory. The presentation style is concise and self-contained, briefly including the mathematical elements that are needed for studying probability and statistics. The examples are relevant to students in the life sciences with interests in genetics, biology, ecology, health, etc.

We believe that aspects of probability theory are of biological interest and that probability underlies the theory of inferential statistics. Thus, we place an equal emphasis on probability and statistics which are both essential for solving and understanding many types of biological problems.