Preface

This Twelfth Edition was written with several goals:

- To provide an abundance of new and interesting data sets, examples, and exercises.
- To foster personal growth of students through critical thinking, use of technology, collaborative work, and development of communication skills.
- To incorporate the latest and best methods used by professional statisticians.
- To include information personally helpful to students, such as the best job search methods and the importance of avoiding mistakes on résumés.
- To provide the largest and best set of supplements to enhance teaching and learning.

GAISE This book reflects recommendations from the American Statistical Association and its *Guidelines for Assessment and Instruction in Statistics Education* (GAISE). Those guidelines suggest the following objectives and strategies.

1. **Emphasize statistical literacy and develop statistical thinking:** Each section exercise set begins with *Statistical Literacy and Critical Thinking* exercises. Many of the book's exercises are designed to encourage statistical thinking rather than the blind use of mechanical procedures.
2. **Use real data:** 91% of the examples and 89% of the exercises use real data.
3. **Stress conceptual understanding rather than mere knowledge of procedures:** Instead of seeking simple numerical answers, exercises and examples involve conceptual understanding through questions that encourage practical interpretations of results. Also, each chapter includes a *Data to Decision* project.
4. **Foster active learning in the classroom:** Each chapter ends with several *Cooperative Group Activities*.
5. **Use technology for developing conceptual understanding and analyzing data:** Computer software displays are included throughout the book. Special *Using Technology* subsections include instruction for using the software. Each chapter includes a *Technology Project*. When there are discrepancies between answers based on tables and answers based on technology, Appendix D provides *both* answers. The CD-ROM included with the book includes instructions for downloading free text-specific software (STATDISK) and data sets formatted for several different technologies, which are also listed in Appendix B.
6. **Use assessments to improve and evaluate student learning:** Assessment tools include an abundance of section exercises, Chapter Quick Quizzes, Chapter Review Exercises, Cumulative Review Exercises, technology projects, "Data to Decision" projects, and Cooperative Group Activity projects.

Audience/Prerequisites

Elementary Statistics is written for students majoring in any subject. Algebra is used minimally, but students should have completed at least a high school or college elementary algebra course. In many cases, underlying theory is included, but this book does not require the mathematical rigor more suitable for mathematics majors.