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Preface

This book is meant to be a textbook for a standard one-semester introductory statistics course for general education students. Our motivation for writing it is twofold: 1.) to provide a low-cost alternative to many existing popular textbooks on the market; and 2.) to provide a quality textbook on the subject with a focus on the core material of the course in a balanced presentation.

The high cost of textbooks has spiraled out of control in recent years. The high frequency at which new editions of popular texts appear puts a tremendous burden on students and faculty alike, as well as the natural environment. Against this background we set out to write a quality textbook with materials such as examples and exercises that age well with time and that would therefore not require frequent new editions. Our vision resonates well with the publisher's business model which includes free digital access, reduced paper prints, and easy customization by instructors if additional material is desired.

Over time the core content of this course has developed into a well-defined body of material that is substantial for a one-semester course. The authors believe that the students in this course are best served by a focus on the core material and not by an exposure to a plethora of peripheral topics. Therefore in writing this book we have sought to present material that comprises fully a central body of knowledge that is defined according to convention, realistic expectation with respect to course duration and students' maturity level, and our professional judgment and experience. We believe that certain topics, among them Poisson and geometric distributions and the normal approximation to the binomial distribution (particularly with a continuity correction) are distracting in nature. Other topics, such as nonparametric methods, while important, do not belong in a first course in statistics. As a result we envision a smaller and less intimidating textbook that trades some extended and unnecessary topics for a better focused presentation of the central material.

Textbooks for this course cover a wide range in terms of simplicity and complexity. Some popular textbooks emphasize the simplicity of individual concepts to the point of lacking the coherence of an overall network of concepts. Other textbooks include overly detailed conceptual and computational discussions and as a result repel students from reading them. The authors believe that a successful book must strike a balance between the two extremes, however difficult it may be. As a consequence the overarching guiding principle of our writing is to seek simplicity but to preserve the coherence of the whole body of information communicated,

both conceptually and computationally. We seek to remind ourselves (and others) that we teach ideas, not just step-by-step algorithms, but ideas that can be implemented by straightforward algorithms.

In our experience most students come to an introductory course in statistics with a calculator that they are familiar with and with which their proficiency is more than adequate for the course material. If the instructor chooses to use technological aids, either calculators or statistical software such as Minitab or SPSS, for more than mere arithmetical computations but as a significant component of the course then effective instruction for their use will require more extensive written instruction than a mere paragraph or two in the text. Given the plethora of such aids available, to discuss a few of them would not provide sufficiently wide or detailed coverage and to discuss many would digress unnecessarily from the conceptual focus of the book. The overarching philosophy of this textbook is to present the core material of an introductory course in statistics for non-majors in a complete yet streamlined way. Much room has been intentionally left for instructors to apply their own instructional styles as they deem appropriate for their classes and educational goals. We believe that the whole matter of what technological aids to use, and to what extent, is precisely the type of material best left to the instructor's discretion.

All figures with the exception of Figure 1.1 "The Grand Picture of Statistics", Figure 2.1 "Stem and Leaf Diagram", Figure 2.2 "Ordered Stem and Leaf Diagram", Figure 2.13 "The Box Plot", Figure 10.4 "Linear Correlation Coefficient ", Figure 10.5 "The Simple Linear Model Concept", and the unnumbered figure in Note 2.50 "Example 16" of Chapter 2 "Descriptive Statistics" were generated using MATLAB, copyright 2010.