

Whitlock Schluter The Analysis Of Biological Data

The origin of biological diversity, via the formation of new species, can be inextricably linked to adaptation to the ecological environment. Specifically, ecological processes are central to the formation of new species when barriers to gene flow (reproductive isolation) evolve between populations as a result of ecologically-based divergent natural selection. This process of 'ecological speciation' has seen a large body of particularly focused research in the last 10-15 years, and a review and synthesis of the theoretical and empirical literature is now timely. The book begins by clarifying what ecological speciation is, its alternatives, and the predictions that can be used to test for it. It then reviews the three components of ecological speciation and discusses the geography and genomic basis of the process. A final chapter highlights future research directions, describing the approaches and experiments which might be used to conduct that future work. The ecological and genetic literature is integrated throughout the text with the goal of shedding new insight into the speciation process, particularly when the empirical data is then further integrated with theory.

Adaptive radiation is the evolution of diversity within a rapidly multiplying lineage. It can cause a single ancestral species to differentiate into an impressively vast array of species inhabiting a variety of environments. Much of life's diversity has arisen during adaptive radiations. Some of the most famous recent examples include the East African cichlid fishes, the Hawaiian silverswords, and of course, Darwin's Gal-acute--pagos finches. This book evaluates the causes of adaptive radiation. It focuses on the 'ecological' theory of adaptive radiation, a body of ideas that began with Darwin and was developed through the early part of the 20th Century. This theory proposes that phenotypic divergence and speciation in adaptive radiation are caused ultimately by divergent natural selection arising from differences in environment and competition between species. In The Ecology of Adaptive Radiation the author re-evaluates the ecological theory, along with its most significant extensions and challenges, in the light of all the recent evidence. This important book is the first full exploration of the causes of adaptive radiation to be published for decades, written by one of the world's best young evolutionary biologists.

A thorough understanding of biology, no matter which subfield, requires a thorough understanding of statistics. As in previous editions, Havel and Hampton (with new co-author Scott Meiners) ground students in all essential methods of descriptive and inferential statistics, using examples from different biological sciences. The authors have retained the readable, accessible writing style popular with both students and instructors. Pedagogical improvements new to this edition include concept checks in all chapters to assist students in active learning and code samples showing how to solve many of the book's examples using R. Each chapter features numerous practice and homework exercises, with larger data sets available for download at waveland.com.

Biodiversity--the genetic variety of life--is an exuberant product of the evolutionary past, a vast human-supportive resource (aesthetic, intellectual, and material) of the present, and a rich legacy to cherish and preserve for the future. Two urgent challenges, and opportunities, for 21st-century science are to gain deeper insights into the evolutionary processes that foster biotic diversity, and to translate that understanding into workable solutions for the regional and global crises that biodiversity currently faces. A grasp of evolutionary principles and processes is important in other societal arenas as well, such as education, medicine, sociology, and other applied fields including agriculture, pharmacology, and biotechnology. The ramifications of evolutionary thought also extend into learned realms traditionally reserved for philosophy and religion. The central goal of the In the Light of Evolution (ILE) series is to promote the evolutionary sciences through state-of-the-art colloquia--in the series of Arthur M. Sackler colloquia sponsored by the National Academy of Sciences--and their published proceedings. Each installment explores evolutionary perspectives on a particular biological topic that is scientifically intriguing but also has special relevance to contemporary societal issues and challenges. This tenth and final edition of the In the Light of Evolution series focuses on recent developments in phylogeographic research and their relevance to past accomplishments and future research directions.

Modern Statistics for Modern Biology

S-Plus for the Analysis of Biological Data

An Introduction using R

The Ecology of Adaptive Radiation

Marine Mammal Biology

THE STATISTICAL SLEUTH: A COURSE IN METHODS OF DATA ANALYSIS, Third Edition offers an appealing treatment of general statistical methods that takes full advantage of the computer, both as a computational and an analytical tool. The material is independent of any specific software package, and prominently treats modeling and interpretation in a way that goes beyond routine patterns. The book focuses on a serious analysis of real case studies, strategies and tools of modern statistical data analysis, the interplay of statistics and scientific learning, and the communication of results. With interesting examples, real data, and a variety of exercise types (conceptual, computational, and data problems), the authors get students excited about statistics. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

Environmental Data Analysis is an introductory statistics textbook for environmental science. It covers descriptive, inferential and predictive statistics, centred on the Generalized Linear Model. The key idea behind this book is to approach statistical analyses from the perspective of maximum likelihood, essentially treating most analyses as (multiple) regression problems. The reader will be introduced to statistical distributions early on, and will learn to deploy models suitable for the data at hand, which in environmental science are often not normally distributed. To make the initially steep learning curve more manageable, each statistical chapter is followed by a walk-through in a corresponding R-based how-to chapter, which reviews the theory and applies it to environmental data. In this way, a coherent and expandable foundation in parametric statistics is laid, which can be expanded in advanced courses. The content has been 'field-tested' in several years of courses on statistics for Environmental Science, Geography and Forestry taught at the University of Freiburg.

Much of our knowledge about marine mammals is derived from a long-term and dedicated research effort that is evolving rapidly due to the introduction and invention of new methods. This book reflects the inventiveness of marine researchers as they try to find ways around the problems presented to them by these unusual and challenging animals.

The evolution of a classic The new 12th edition of Introduction to Genetic Analysis takes this cornerstone textbook to the next level. The hallmark focuses on genetic analysis, quantitative problem solving, and experimentation continue in this new edition while incorporating robust updates to the science. Introduction to Genetic Analysis is now supported in Achieve, Macmillan's new online learning platform. Achieve is the culmination of years of development work put toward creating the most powerful online learning tool for biology students. It houses all of our renowned assessments, multimedia assets, e-books, and instructor resources in a powerful new platform.

A First Course in Design and Analysis of Experiments

Fourth Edition

In the Light of Evolution

A Handbook of Techniques

Biostatistical Design and Analysis Using R

The Princeton Guide to Evolution is a comprehensive, concise, and authoritative reference to the major subjects and key concepts in evolutionary biology, from genes to mass extinctions. Edited by a distinguished team of evolutionary biologists, with contributions from leading researchers, the guide contains some 100 clear, accurate, and up-to-date articles on the most important topics in seven major areas: phylogenetics and the history of life; selection and adaptation; evolutionary processes; genes, genomes, and phenotypes; speciation and macroevolution; evolution of behavior, society, and humans; and evolution and modern society. Complete with more than 100 illustrations (including eight pages in color), glossaries of key terms, suggestions for further reading on each topic, and an index, this is an essential volume for undergraduate and graduate students, scientists in related fields, and anyone else with a serious interest in evolution. Explains key topics in some 100 concise and authoritative articles written by a team of leading evolutionary biologists Contains more than 100 illustrations, including eight pages in color Each article includes an outline, glossary, bibliography, and cross-references Covers phylogenetics and the history of life; selection and adaptation; evolutionary processes; genes, genomes, and phenotypes; speciation and macroevolution; evolution of behavior, society, and humans; and evolution and modern society

This book is aimed directly at students of geography, particularly those who lack confidence in manipulating numbers. The aim is not to teach the mathematics behind statistical tests, but to focus on the logic, so that students can choose the most appropriate tests, apply them in the most convenient way and make sense of the results. Introductory chapters explain how to use statistical methods and then the tests are arranged according to the type of data that they require. Diagrams are used to guide students toward the most appropriate tests. The focus is on nonparametric methods that make very few assumptions and are appropriate for the kinds of data that many students will collect. Parametric methods, including Student's t-tests, correlation and regression are also covered. Although aimed directly at geography students at senior undergraduate and graduate level, this book provides an accessible introduction to a wide range of statistical methods and will be of value to students and researchers in allied disciplines including Earth and environmental science, and the social sciences.

This approach encourages students to work through the statistics by carrying data collection and analysis projects from problem formulation through preparation of professional technical reports - just as if they were on the job."--BOOK JACKET.

A far-reaching course in practical advanced statistics for biologists using R/Bioconductor, data exploration, and simulation.

An Introduction to Statistical Methods and Data Analysis

The Statistical Sleuth: A Course in Methods of Data Analysis

Microevolution Rate, Pattern, Process

A Primer for Scientists

Data and Probability Connections

Experimental Design for the Life Sciences explains how to organise experiments and collect data to make analysis easier, and conclusions more robust. An approachable and articulate style conveys even the most challenging concepts in clear and practical terms, showing how experimental design is about clear thinking and biological understanding, not mathematical or statistical complexity.

A manual to introduce S-Plus statistical software and the S language, especially to biologists. The book is based on "The Analysis of Biological Data" by Whitlock and Schluter, pub. Roberts and Co. (2009) [ISBN 978-0-9815194-0-1]. It provides a series of explanations and exercises using the chapter-by-chapter examples and datasets from Whitlock and Schluter's text, and can be used as a practical hands-on introduction to S-Plus for self-study or as part of an introductory statistics course.

Knowledge of statistics is essential in modern biology and medicine. Biologists and health professionals learn statistics best with real and interesting examples. The Analysis of Biological Data, Second Edition, by Whitlock and Schluter, teaches modern methods of statistics through the use of fascinating biological and medical cases. Readers consistently praise its clear and engaging writing and practical perspective. The second edition features over 200 new examples and problems. These include new calculation practice problems, which guide the student step by step through the methods, and a greater number of the examples and topics come from medical and human health research. Every chapter has been carefully edited for even greater clarity and ease of use. All the data sets, R scripts for all worked examples in the book, as well as many other teaching resources, are available to qualified instructors.

Go beyond theory and start to master the essential communication skills and techniques you'll need throughout all areas of nursing practice. Communication in Nursing, 7th Edition uses a personal and empathetic approach, along with unique artistic features, to help you develop a deeper understanding of the importance of communication. Comprehensive, step-by-step guidelines teach you how to establish patient relationships, and new QSEN-specific exercises help you learn to connect more effectively with patients, co-workers, and managers for better clinical outcomes. Real-life clinical scenarios, chapter exercises, and a new writing tutorial also offer endless opportunities to hone your skills. Moments of Connection boxes highlight the outcomes and benefits of successful communication. Wit & Wisdom boxes provide a humorous, personal approach to communication theory and application. Reflections On... boxes give you a specific task to help you integrate chapter material into the broader scope of nursing practice. Exercises throughout the book help you master chapter techniques and strengthen your communication skills. QSEN-specific exercises developed by a leading expert highlight how safety and improved care can result from better communication. UNIQUE! Online writing tutorial on Evolve helps you review and improve your technical writing skills. Case studies on Evolve give you practice using proper communication skills in a variety of real-life case scenarios. The latest information on compassion fatigue, language use, client preconceived ideas about health care, transcultural issues, technology, and the demands of electronic medical record systems provide you with the most up-to-date and relevant information needed to excel in today's nursing field.

Statistics

Mathematical Statistics and Data Analysis

Statistical Thinking from Scratch

Marine Mammal Ecology and Conservation

Introductory Biological Statistics

Perfect for a single term on Molecular Biology and more accessible to beginning students in the field than its encyclopedic counterparts, Fundamental Molecular Biology provides a distillation of the essential concepts of molecular biology, and is supported by current examples, experimental evidence, an outstanding art program, multimedia support and a solid pedagogical framework. The text has been praised both for its balanced and solid coverage of traditional topics, and for its broad coverage of RNA structure and function, epigenetics and medical molecular biology.

Computer software is an essential tool for many statistical modelling and data analysis techniques, aiding in the implementation of large data sets in order to obtain useful results. R is one of the most powerful and flexible statistical software packages available, and enables the user to apply a wide variety of statistical methods ranging from simple regression to generalized linear modelling. Statistics: An Introduction using R is a clear and concise introductory textbook to statistical analysis using this powerful and free software, and follows on from the success of the author's previous best-selling title Statistical Computing. * Features step-by-step instructions that assume no mathematics, statistics or programming background, helping the non-statistician to fully understand the methodology. * Uses a series of realistic examples, developing step-wise from the simplest cases, with the emphasis on checking the assumptions (e.g. constancy of variance and normality of errors) and the adequacy of the model chosen to fit the data. * The emphasis throughout is on estimation of effect sizes and confidence intervals, rather than on hypothesis testing. * Covers the full range of statistical techniques likely to be used to analyse the data from research projects, including elementary material like t-tests and chi-squared tests, intermediate methods like regression and analysis of variance, and more advanced techniques like generalized linear modelling. * Includes numerous worked examples and exercises within each chapter. * Accompanied by a website featuring worked examples, data sets, exercises and solutions: <http://www.imperial.ac.uk/bio/research/crawley/statistics> **Statistics: An Introduction using R is the first text to offer such a concise introduction to a broad array of statistical methods, at a level that is elementary enough to appeal to a broad range of disciplines. It is primarily aimed at undergraduate students in medicine, engineering, economics and biology - but will also appeal to postgraduates who have not previously covered this area, or wish to switch to using R.**

From guppies to Galapagos finches and from adaptive landscapes to haldanes, this compilation of contributed works provides reviews, perspectives, theoretical models, statistical developments, and empirical demonstrations exploring the tempo and mode of microevolution on contemporary to geological time scales. New developments, and reviews, of classic and novel empirical systems demonstrate the strength and diversity of evolutionary processes producing biodiversity within species. Perspectives and theoretical insights expand these empirical observations to explore patterns and mechanisms of microevolution, methods for its quantification, and implications for the evolution of biodiversity on other scales. This diverse assemblage of manuscripts is aimed at professionals, graduate students, and advanced undergraduates who desire a timely synthesis of current knowledge, an illustration of exciting new directions, and a springboard for future investigations in the study of microevolution in the wild.

Bringing together the viewpoints of leading ecologists concerned with the processes that generate patterns of diversity, and evolutionary biologists who focus on mechanisms of speciation, this book opens up discussion in order to broaden understanding of how speciation affects patterns of biological diversity, especially the uneven distribution of diversity across time, space and taxa studied by macroecologists. The contributors discuss questions such as: Are species equivalent units, providing meaningful measures of diversity? To what extent do mechanisms of speciation affect the functional nature and distribution of species diversity? How can speciation rates be measured using molecular phylogenies or data from the fossil record? What are the factors that explain variation in rates? Written for graduate students and academic researchers, the book promotes a more complete understanding of the interaction between mechanisms and rates of speciation and these patterns in biological diversity.

Volume X: Comparative Phylogeography

The Analysis of Biological Data Achieve access card

Philosophy of Science

Statistics for Biologists

An Historical Anthology

INTRODUCTION TO STATISTICAL METHODS AND DATA ANALYSIS, Sixth Edition, provides a broad overview of statistical methods for advanced undergraduate and graduate students from a variety of disciplines who have little or no prior course work in statistics. The authors teach students to solve problems encountered in research projects, to make decisions based on data in general settings both within and beyond the university setting, and to become critical readers of statistical analyses in research papers and in news reports. The first eleven chapters present material typically covered in an introductory statistics course, as well as case studies and examples that are often encountered in undergraduate capstone courses. The remaining chapters cover regression modeling and design of experiments. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

Part of a project funded by the National Science Foundation to improve the quality of mathematics and science teaching in grades K-12, this new guide models the student-centered approach recommended by the National Council of Teachers of Mathematics to teach introductory statistics. Provides future middle grade mathematics teachers with a strong foundation, connecting the mathematics they are learning with the mathematics they will be teaching. Gives enhanced meaning to formulas via a visual or geometric approach. Uses numerous illustrations to assist readers in making explicit connections between a typical college elementary statistics course and the statistical concepts taught by middle school teachers. For anyone interested in introductory statistics.

R - the statistical and graphical environment is rapidly emerging as an important set of teaching and research tools for biologists. This book draws upon the popularity and free availability of R to couple the theory and practice of biostatistics into a single treatment, so as to provide a textbook for biologists learning statistics, R, or both. An abridged description of biostatistical principles and analysis sequence keys are combined together with worked examples of the practical use of R into a complete practical guide to designing and analyzing real biological research. Topics covered include: simple hypothesis testing, graphing exploratory data analysis and graphical summaries regression (linear, multi and non-linear) simple and complex ANOVA and ANCOVA designs (including nested, factorial, blocking, spit-plot and repeated measures) frequency analysis and generalized linear models. Linear mixed effects modeling is also incorporated extensively throughout as an alternative to traditional modeling techniques. The book is accompanied by a companion website www.wiley.com/go/logan/r with an extensive set of resources comprising all R scripts and data sets used in the book, additional worked examples, the biology package, and other instructional materials and links.

The Analysis of Biological Data provides students with a practical foundation of statistics for biology students. Every chapter has several biological or medical examples of key concepts, and each example is prefaced by a substantial description of the biological setting. The emphasis on real and interesting examples carries into the problem sets where students have dozens of practice problems based on real data. The third edition features over 200 new examples and problems. These include new calculation practice problems, which guide the student step by step through the methods, and a greater number of examples and topics come from medical and human health research. Every chapter has been carefully edited for even greater clarity and ease of use. All the data sets, R scripts for all worked examples in the book, as well as many other teaching resources, are available to qualified instructors (see below).

Getting Started with R

Seplingplus for the Analysis of Biological Data Multi-term Access

Introduction to Statistics and Data Analysis

A Practical Guide

Genetic Management of Fragmented Animal and Plant Populations

Focusing on user-developed programming, An R Companion to Linear Statistical Models serves two audiences: those who are familiar with the theory and applications of linear statistical models and wish to learn or enhance their skills in R; and those who are enrolled in an R-based course on regression and analysis of variance. For those who have never " Brilliant, funny... the best math teacher you never had. " --San Francisco Chronicle Once considered tedious, the field of statistics is rapidly evolving into a discipline Hal Varian, chief economist at Google, has actually called " sexy. " From batting averages and political polls to game shows and medical research, the real-world application of statistics continues to grow by leaps and bounds. How can we catch schools that cheat on standardized tests? How does Netflix know which movies you ' ll like? What is causing the rising incidence of autism? As best-selling author Charles Wheelan shows us in Naked Statistics, the right data and a few well-chosen statistical tools can help us answer these questions and more. For those who slept through Stats 101, this book is a lifesaver.

Wheelan strips away the arcane and technical details and focuses on the underlying intuition that drives statistical analysis. He clarifies key concepts such as inference, correlation, and regression analysis, reveals how biased or careless parties can manipulate or misrepresent data, and shows us how brilliant and creative researchers are exploiting the valuable data from natural experiments to tackle thorny questions. And in Wheelan ' s trademark style, there ' s not a dull page in sight. You ' ll encounter clever Schiltz Beer marketers leveraging basic probability, an International Sausage Festival illuminating the tenets of the central limit theorem, and a head-scratching choice from the famous game show Let ' s Make a Deal--and you ' ll come away with insights each time. With the wit, accessibility, and sheer fun that turned Naked Economics into a bestseller, Wheelan defies the odds yet again by bringing another essential, formerly unglamorous discipline to life.

As well as emphasising the links to evolution, 'Ecology' covers all the levels of the ecological hierarchy at which the subject is studied. It focuses on their integration to ensure that students are able to grasp how events in nature are interconnected. R is rapidly becoming the standard software for statistical analyses, graphical presentation of data, and programming in the natural, physical, social, and engineering sciences. Getting Started with R is now the go-to introductory guide for biologists wanting to learn how to use R in their research. It teaches readers how to import, explore, graph, and analyse data, while keeping them focused on their ultimate goals: clearly communicating their data in oral presentations, posters, papers, and reports. It provides a consistent workflow for using R that is simple, efficient, reliable, and reproducible. This second edition has been updated and expanded while retaining the concise and engaging nature of its predecessor, offering an accessible and fun introduction to the packages dplyr and ggplot2 for data manipulation and graphing. It expands the set of basic statistics considered in the first edition to include new examples of a simple regression, a one-way and a two-way ANOVA. Finally, it introduces a new chapter on the generalised linear model. Getting Started with R is suitable for undergraduates, graduate students, professional researchers, and practitioners in the biological sciences.

An R Companion to Linear Statistical Models

The Princeton Guide to Evolution

Speciation and Patterns of Diversity

Basic Engineering Data Collection and Analysis

Experimental Design for the Life Sciences

This is the first text in a generation to re-examine the purpose of the mathematical statistics course. The book's approach interweaves traditional topics with data analysis and reflects the use of the computer with close ties to the practice of statistics. The author stresses analysis of data, examines real problems with real data, and motivates the theory. The book's descriptive statistics, graphical displays, and realistic applications stand in strong contrast to traditional texts that are set in abstract settings. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

Researchers across the natural and social sciences find themselves navigating tremendous amounts of new data. Making sense of this flood of information requires more than the rote application of formulaic statistical methods. The premise of Statistical Thinking from Scratch is that students who want to become confident data analysts are better served by a deep introduction to a single statistical method than by a cursory overview of many methods. In particular, this book focuses on simple linear regression--a method with close connections to the most important tools in applied statistics--using it as a detailed case study for teaching resampling-based, likelihood-based, and Bayesian approaches to statistical inference. Considering simple linear regression in depth imparts an idea of how statistical procedures are designed, a flavour for the philosophical positions one assumes when applying statistics, and tools to probe the strengths of one's statistical approach. Key to the book's novel approach is its mathematical level, which is gentler than most texts for statisticians but more rigorous than most texts for nonstatisticians. Statistical Thinking from Scratch is suitable for senior undergraduate and beginning graduate students, professional researchers, and practitioners seeking to improve their understanding of statistical methods across the natural and social sciences, medicine, psychology, public health, business, and other fields.

Oehlert's text is suitable for either a service course for non-statistics graduate students or for statistics majors. Unlike most texts for the one-term grad/upper level course on experimental design, Oehlert's new book offers a superb balance of both analysis and design, presenting three practical themes to students: * when to use various designs * how to analyze the results * how to recognize various design options Also, unlike other older texts, the book is fully oriented toward the use of statistical software in analyzing experiments.

This book provides a general introduction to the biology of marine mammals, and an overview of the adaptations that have permitted mammals to succeed in the marine environment. Each chapter, written by experts in their field, will provide an up-to-date review and present the major discoveries and innovations in the field. Important technical advances such as satellite telemetry and time-depth-recorders will be described in boxes.

The Analysis of Biological Data

Simple Statistical Tests for Geography

Ecology

Ecological Speciation

Statistical Analysis of Microbiome Data

Roxy Peck, Chris Olsen, and Jay Devore's new edition uses real data and attention-grabbing examples to introduce students to the study of statistics and data analysis. Traditional in structure yet modern in approach, this text guides students through an intuition-based learning process that stresses interpretation and communication of statistical information. Simple notation--including frequent substitution of words for symbols--helps students grasp concepts and cement their comprehension. Hands-on activities and interactive applets allow students to practice statistics firsthand. INTRODUCTION TO STATISTICS AND DATA ANALYSIS includes updated coverage of most major technologies, as well as expanded coverage of probability. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

By combining excerpts from key historical writings with commentary by experts, Philosophy of Science: An Historical Anthology provides a comprehensive history of the philosophy of science from ancient to modern times. Provides a comprehensive history of the philosophy of science, from antiquity up to the 20th century Includes extensive commentary by scholars putting the selected writings in historical context and pointing out their interconnections Covers areas rarely seen in philosophy of science texts, including the philosophical dimensions of biology, chemistry, and geology Designed to be accessible to both undergraduates and graduate students

Praise for the Second Edition "A must-have book for anyone expecting to do research and/orapplications in categorical data analysis." --Statistics in Medicine "It is a total delight reading this book." --Pharmaceutical Research "If you do any analysis of categorical data, this is anessential desktop reference." --Technometrics The use of statistical methods for analyzing categorical databas increased dramatically, particularly in the biomedical, socialsciences, and financial industries. Responding to new developments,this book offers a comprehensive treatment of the most importantmethods for categorical data analysis. Categorical Data Analysis, Third Edition summarizes thelatest methods for univariate and correlated multivariatecategorical responses. Readers will find a unified generalizedlinear models approach that connects logistic regression andPoisson and negative binomial loglinear models for discrete datawith normal regression for continuous data. This edition alsofeatures: An emphasis on logistic and probit regression methods forbinary, ordinal, and nominal responses for independent observationsand for clustered data with marginal models and random effectsmodels Two new chapters on alternative methods for binary responsesdata, including smoothing and regularization methods,classification methods such as linear discriminant analysis andclassification trees, and cluster analysis New sections introducing the Bayesian approach for methods inthat chapter More than 100 analyses of data sets and over 600 exercises Notes at the end of each chapter that provide references torecent research and topics not covered in the text, linked to a bibliography of more than 1,200 sources A supplementary website showing how to use R and SAS; for all examples in the text, with information also about SPSS and Stateand with exercise solutions Categorical Data Analysis, Third Edition is an invaluabletool for statisticians and methodologists, such as biostatisticiansand researchers in the social and behavioral sciences, medicine andpublic health, marketing, education, finance, biological andagricultural sciences, and industrial quality control.

One of the greatest unmet challenges in conservation biology is the genetic management of fragmented populations of threatened animal and plant species. More than a million small, isolated, population fragments of threatened species are likely suffering inbreeding depression and loss of evolutionary potential, resulting in elevated extinction risks. Although these effects can often be reversed by re-establishing gene flow between population fragments, managers very rarely do this. On the contrary, genetic methods are used mainly to document genetic differentiation among populations, with most studies concluding that genetically differentiated populations should be managed separately, thereby isolating them yet further and dooming many to eventual extinction! Many small population fragments are going extinct principally for genetic reasons. Although the rapidly advancing field of molecular genetics is continually providing new tools to measure the extent of population fragmentation and its genetic consequences, adequate guidance on how to use these data for effective conservation is still lacking. This accessible, authoritative text is aimed at senior undergraduate and graduate students interested in conservation biology, conservation genetics, and wildlife management. It will also be of particular relevance to conservation practitioners and natural resource managers, as well as a broader academic audience of conservation biologists and evolutionary ecologists.

Categorical Data Analysis

Fundamental Molecular Biology, 2nd Edition

An Introduction with Examples in R

Naked Statistics: Stripping the Dread from the Data

An Evolutionary Approach

Microbiome research has focused on microorganisms that live within the human body and their effects on health. During the last few years, the quantification of microbiome composition in different environments has been facilitated by the advent of high throughput sequencing technologies. The statistical challenges include computational normalization and quantification of metabolic abundances, relative taxa and bacterial genes: high-dimensionality; multivariate analysis; the inherently compositional nature of the data; and the proper utilization of complementary phylogenetic information. This has resulted in an explosion of statistical approaches aimed at tackling the unique challenges posed by microbiome data. This book provides a comprehensive overview of the state of the art in statistical and informatics technologies for microbiome research. In addition to reviewing demonstrably successful cutting-edge methods, particular emphasis is placed on examples in R that rely on available statistical packages for microbiome data.

Environmental Data Analysis

Communication in Nursing - E-Book