

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.

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