

1. Record Nr.	UNISA996511863503316
Autore	McCullagh P. J (Peter John)
Titolo	Ten projects in applied statistics / / Peter McCullagh
Pubbl/distr/stampa	Cham, Switzerland : , : Springer International Publishing, , [2023] ©2023
ISBN	9783031142758 9783031142741
Edizione	[1st ed. 2022.]
Descrizione fisica	1 online resource (415 pages)
Collana	Springer Series in Statistics, , 2197-568X
Disciplina	519.5
Soggetti	Mathematical statistics Mathematical statistics - Asymptotic theory Estadística Investigació quantitativa Llibres electrònics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	1. Rat Surgery -- 2. Chain Saws -- 3. Fruit Flies -- 4. Growth Curves -- 5. Louse Evolution -- 6. Time Series I -- 7. Time Series II -- 8. Out of Africa -- 9. Environmental Projects -- 10. Fulmar Fitness -- 11. Basic Concepts -- 12. Principles -- 13. Initial Values -- 14. Probability Distributions -- 15. Gaussian Distributions -- 16. Space-Time Processes -- 17. Likelihood -- 18. Residual Likelihood -- 19. Response Transformation -- 20. Presentations and Reports -- 21. Q & A .
Sommario/riassunto	The first half of the book is aimed at quantitative research workers in biology, medicine, ecology and genetics. The book as a whole is aimed at graduate students in statistics, biostatistics, and other quantitative disciplines. Ten detailed examples show how the author approaches real-world statistical problems in a principled way that allows for adequate compromise and flexibility. The need to accommodate correlations associated with space, time and other relationships is a recurring theme, so variance-components models feature prominently. Statistical pitfalls are illustrated via examples taken from the recent scientific literature. Chapter 11 sets the scene, not just for the second half of the book, but for the book as a whole. It begins by defining

fundamental concepts such as baseline, observational unit, experimental unit, covariates and relationships, randomization, treatment assignment, and the role that these play in model formulation. Compatibility of the model with the randomization scheme is crucial. The effect of treatment is invariably modelled as a group action on probability distributions. Technical matters connected with space-time covariance functions, residual likelihood, likelihood ratios, and transformations are discussed in later chapters.

---