Mathematical Models in the Health Sciences: A Computer-Aided Approach

Eugene Ackerman and Lael Cranmer Gatewood
Minneapolis: University of Minnesota Press, 1979. 357 pages, $23.50

Reviewed by
Dwight Hines, Ph.D.
Research Psychologist
Bangor, Maine 04401, U.S.A.

Most books with impressive encompassing titles such as this one are multi-editored, multi-authored disappointments. Ackerman and Gatewood have written an excellent book that can be used as a core reference. It is difficult to pan this book. The material is up to date (the inclusion of Walsh *as well as* Fourier), the references are solid, and the style is sweet.

The book covers compartmental analysis, enzyme kinetics and systems, as well as different time series approaches; the EEG, EKG, information theory, genetic transfer of information, and simulation of epidemics. The inclusion of population, ecology and the World System is ambitious but not pretentious so that the reader wants to know more.

If you are majoring in physiology, nutrition, physiological psychology, mathematics, computer science, biology, or biometry and have had exposure to calculus and computer programming, this book will be invaluable in understanding and interpreting your results in novel and unique ways. I expect this book to become a standard and to go through a number of editions and printings. The information it contains is complementary and supplementary to texts such as Snedecor and Cochran (1980). The book should be required reading for *all* experimental psychologists. It is crucial that psychologists learn that ANOVA and MANOVA are not the only appropriate approach to their data.

Ackerman and Gatewood, Snedecor and Cochran, and Tukey (*Exploratory Data Analysis)* form a core library for experimentalists. Both macro and microscopic approaches to experimentalism are adequately represented.