

A MULTI-DISCIPLINE, HANDS-ON GUIDE TO MICROARRAY ANALYSIS OF BIOLOGICAL PROCESSES

Analyzing Microarray Gene Expression Data provides a comprehensive review of available methodologies for the analysis of data derived from the latest DNA microarray technologies. Designed for biostatisticians entering the field of microarray analysis as well as biologists seeking to more effectively analyze their own experimental data, the text features a unique interdisciplinary approach and a combined academic and practical perspective that offers readers the most complete and applied coverage of the subject matter to date.

Following a basic overview of the biological and technical principles behind microarray experimentation, the text provides a look at some of the most effective tools and procedures for achieving optimum reliability and reproducibility of research results, including:

- An in-depth account of the detection of genes that are differentially expressed across a number of classes of tissues
- Extensive coverage of both cluster analysis and discriminant analysis of microarray data and the growing applications of both methodologies
- A model-based approach to cluster analysis, with emphasis on the use of the EMMIX-GENE procedure for the clustering of tissue samples
- The latest data cleaning and normalization procedures
- The uses of microarray expression data for providing important prognostic information on the outcome of disease

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