

Bioinformatics and Biomarker Discovery

"omic" data analysis for personalized medicine

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Bioinformatics and Biomarker Discovery: "Omic" Data Analysis for Personalized Medicine is designed to introduce biologists, clinicians and computational researchers to fundamental data analysis principles, techniques and tools for supporting the discovery of biomarkers and the implementation of diagnostic/prognostic systems.

The focus of the book is on how fundamental statistical and data mining approaches can support biomarker discovery and evaluation, emphasizing applications based on different types of "omic" data. The book also discusses design factors, requirements and techniques for disease screening, diagnostic and prognostic applications.

Readers are provided with the knowledge needed to assess the requirements, computational approaches and outputs in disease biomarker research. Commentaries from guest experts are also included, containing detailed discussions of methodologies and applications based on specific types of "omic" data, as well as their integration.

- Covers the main range of data sources currently used for biomarker discovery
- Puts emphasis on concepts, design principles and methodologies that can be extended or tailored to more specific applications
- Offers principles and methods for assessing the bioinformatic/biostatistic limitations, strengths and challenges in biomarker discovery studies
- Discusses systems biology approaches and applications
- Includes expert chapter commentaries to further discuss relevance of techniques, summarize biological/clinical implications and provide alternative interpretations

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