

1. Record Nr.	UNINA9910778299503321
Titolo	Biomedical informatics in translational research // Hai Hu, Richard J. Mural, Michael N. Liebman, editors
Pubbl/distr/stampa	Boston : , : Artech House, , ©2008 [Piscataqay, New Jersey] : , : IEEE Xplore, , [2008]
ISBN	1-59693-039-X
Descrizione fisica	xiv, 264 p. : ill
Collana	Artech House series bioinformatics & biomedical imaging
Altri autori (Persone)	HuHai MuralRichard J LiebmanMichael N. <1947->
Disciplina	610.285
Soggetti	Medical informatics Bioinformatics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Bibliographic Level Mode of Issuance: Monograph
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Biomedical Informatics in Translational Research; Contents; Preface; Chapter 1 Biomedical Informatics in TranslationalResearch; 1.1 Evolution of Terminology; 1.1.1 Translational Research; 1.1.2 Systems Biology; 1.1.3 Personalized Medicine; References; Chapter 2 The Clinical Perspective; 2.1 Introduction; 2.2 Ethics in Clinical Research; 2.3 Regulatory Policies for Protecting a Research Subject's Privacy; 2.4 Informed Consent; 2.5 Collecting Clinical Data: Developing and Administering Survey Instruments; 2.6 Issues Important to Biomedical Informatics; 2.6.1 Data Tracking and Centralization. 2.6.2 Deidentifying Data2.6.3 Quality Assurance; 2.6.4 Data Transfer from the Health Care Clinic to the Research Setting; 2.7 Standard Operating Procedures; 2.8 Developing and Implementing a Research Protocol; 2.8.1 Developing a Research Protocol; 2.8.2 Implementing the Research Protocol; 2.9 Summary; References; Chapter 3 Tissue Banking: Collection, Processing, and Pathologic Characterization of Biospecimens for Research; 3.1 Introduction; 3.1.1 A Biorepository's Mandate; 3.1.2 Overview of Current Tissue Banking Practices; 3.2 Consenting and Clinical Data Acquisition. 3.3 Blood Collection, Processing, and Storage3.4 Tissue Collection,

Processing, Archiving, and Annotation; 3.4.1 Tissue Collection; 3.4.2 Tissue Processing; 3.4.3 Tissue Archiving and Storage; 3.4.4 Pathologic Characterization of Tissue Samples; 3.5 Conclusion; References; Chapter 4 Biological Perspective; 4.1 Background for "Omics" Technologies; 4.2 Basic Biology and Definitions; 4.2.1 A Historical Perspective; 4.2.2 Biological Processes; 4.2.3 Some Definitions; 4.3 Very Basic Biochemistry; 4.3.1 DNA; 4.3.2 RNA; 4.3.3 Proteins; 4.4 Summary; References; Chapter 5 Genomics Studies. 5.1 Introduction 5.2 Genomic Technologies Used for DNA Analysis; 5.2.1 DNA Sequencing; 5.2.1.2 Biomedical Informatics Requirements; 5.2.1.3 Future Directions; 5.2.2 Genotyping; 5.2.2.1 Array Technologies; 5.2.2.2 Technological Assessment of Genotyping; 5.2.2.3 Affymetrix Genotyping SNP Assay Workflow; 5.2.2.4 QA/SOP Issues; 5.2.2.5 Biomedical Informatics Requirements; 5.2.2.6 Future Directions; 5.2.3 Array-Based Comparative Genomic Hybridization; 5.2.3.1 Technological Assessment of Chromosomal Rearrangements; 5.2.3.2 Example Platform; 5.2.3.3 QA/SOP Issues. 5.2.3.4 Biomedical Informatics Requirements 5.2.3.5 Oligo-Based aCGH Platform; 5.3 Genomic Technology Used for RNA Analysis; 5.3.1 Real-Time PCR; 5.3.1.1 Data Analysis Methods; 5.3.1.2 Biomedical Informatics Requirements; 5.3.1.3 Future Directions; 5.3.2 Microarrays; 5.3.2.1 Array Technologies; 5.3.2.2 Example Platform; 5.3.2.3 QA/SOP Issues; 5.3.2.4 MIAME Checklist and Platform Comparison; 5.3.2.5 Data Analysis Issues; 5.3.2.6 Biomedical Informatics Requirements; 5.3.2.7 Future Directions; 5.3.3 Chips for Alternative Splicing Analysis (GeneChip Exon); 5.3.3.1 Array Technology.

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## Sommario/riassunto

This groundbreaking resource on biomedical informatics gives you step-by-step insight into innovative techniques for integrating and federating data from clinical and high-throughput molecular study platforms as well as from the public domain. It details how to apply computational and statistical technologies to clinical, genomic, and proteomic studies to enhance data collection, tracking, storage, visualization, analysis, and knowledge discovery processes, and to translate knowledge from "bench to bedside" and "bedside to bench" with never-before efficiency. Filling the need for informatic.

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