

## Key Features:

- Comprehensive and integrated account of how genetics and genomics affect the entire spectrum of human health and disease
- Exquisite artwork illuminates the key concepts and mechanisms
- Summary points at the end of each chapter help to consolidate learning
- For each chapter, an abundance of further reading to help provide the reader with direction for further study
- Inclusive online question bank to test understanding
- Standard boxes summarizing certain key principles in genetics
- Clinical boxes summarizing selected case studies, pathogenesis mechanisms or novel therapies for selected diseases

This book is equally suited for newcomers to the field as well as for engineers and scientists that have basic knowledge in this field but are interested in obtaining more information about specific future applications..

## Περιεχόμενα:

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1. Fundamentals of DNA, Chromosomes, and Cells
2. Fundamentals of Gene Structure, Gene Expression, and Human Genome Organization
3. Principles Underlying Core DNA Technologies
4. Principles of Genetic Variation
5. Single-gene Disorders: Inheritance Patterns, Phenotype Variability, and Allele Frequencies
6. Principles of Gene Regulation and Epigenetics
7. How Genetic Variation in DNA and Chromosomes Causes Disease
8. Identifying Disease Genes and Genetic Susceptibility to Complex Disease
9. Genetic Approaches to Treating Disease
10. Cancer Genetics and Genomics
11. Genetic and Genomic Testing in Healthcare: Practical and Ethical Aspects