

Contents in Brief

Part 1 Fundamentals of Gene Structure, Function, and Transmission

1	<i>Genetics and the Organism</i>	1
2	<i>The Structure of Genes and Genomes</i>	23
3	<i>Gene Function</i>	55
4	<i>The Transmission of DNA at Cell Division</i>	91
5	<i>The Inheritance of Single-Gene Differences</i>	117
6	<i>Genetic Recombination in Eukaryotes</i>	147
7	<i>Recombination in Bacteria and Their Viruses</i>	183

Part 2 Methods of Genetic Manipulation

8	<i>Recombinant DNA and Genetic Engineering</i>	213
9	<i>Genomics</i>	265
10	<i>Gene Mutation: Origins and Repair Processes</i>	313
11	<i>Chromosome Mutations</i>	349
12	<i>Mutational Dissection</i>	385

Part 3 Systems Genetics: From Gene to Phenotype

13	<i>Regulation of Gene Transcription</i>	419
14	<i>From Gene to Phenotype</i>	453
15	<i>Regulation of Cell Number: Normal and Cancer Cells</i>	483
16	<i>The Genetic Basis of Development</i>	509

Part 4 Genetic Analysis of Populations

17	<i>Population Genetics</i>	553
18	<i>Quantitative Genetics</i>	587
19	<i>Evolutionary Genetics</i>	619