

Contents

Chapter 1	Nucleic Acid Structure and Gene Expression	1
Chapter 2	Chromosome Structure and Function	29
Chapter 3	Genes in Pedigrees and Populations	61
Chapter 4	Cells and Cell–Cell Communication	91
Chapter 5	Principles of Development	133
Chapter 6	Amplifying DNA: Cell-based DNA Cloning and PCR	163
Chapter 7	Nucleic Acid Hybridization: Principles and Applications	191
Chapter 8	Analyzing the Structure and Expression of Genes and Genomes	213
Chapter 9	Organization of the Human Genome	255
Chapter 10	Model Organisms, Comparative Genomics, and Evolution	297
Chapter 11	Human Gene Expression	345
Chapter 12	Studying Gene Function in the Post-Genome Era	381
Chapter 13	Human Genetic Variability and Its Consequences	405
Chapter 14	Genetic Mapping of Mendelian Characters	441
Chapter 15	Mapping Genes Conferring Susceptibility to Complex Diseases	467
Chapter 16	Identifying Human Disease Genes and Susceptibility Factors	497
Chapter 17	Cancer Genetics	537
Chapter 18	Genetic Testing of Individuals	569
Chapter 19	Pharmacogenetics, Personalized Medicine, and Population Screening	605
Chapter 20	Genetic Manipulation of Animals for Modeling Disease and Investigating Gene Function	639
Chapter 21	Genetic Approaches to Treating Disease	677
	Glossary	719
	Index	737