

At a Glance

Introduction	1
Fundamentals	25
Prologue	26
Molecular Basis of Genetics	36
Analysis of DNA	58
Variability of DNA	72
Processing of DNA	80
Eukaryotic Cells	86
Formal Genetics	104
Chromosomes	132
Regulation of Gene Function	162
Epigenetic Modifications	178
Genetic Signal Pathways	186
Genes in Embryonic Development	196
Genomics	205
Genetics in Medicine	235
Genetic Classification of Diseases	236
Imbalanced Homeostasis	260
Metabolic Disorders	276
Immune System	296
Origins of Cancer	312
Impaired Cell and Tissue Structure	334
Hemoglobin Disorders	350
Sex Determination and Differentiation	362
Sensory Perception	370
Chromosomal Aberrations	382
A Brief Guide to Genetic Diagnosis	388
Morbid Anatomy of the Human Genome	392
Chromosomal Locations—Alphabetical List	398
Appendix	403
Glossary	421
Index	447