

BRIEF CONTENTS

Detailed contents vi

Preface to the third edition x

Acknowledgments xv

Unit I Genes, Genomes, and Organisms

- 1 The basis for genetic analysis 3
- 2 Genomes, chromosomes, and epigenetics 27
- 3 Model organisms and their genomes 65

Unit II Mutants and Phenotypes

- 4 Identifying and classifying mutants 117
- 5 Connecting phenotypes with DNA sequences 171
- 6 Mutant phenotypes and gene activity 202
- 7 Reverse genetics: Editing genes in yeast and mice 237
- 8 Genome editing 265
- 9 Genome-wide mutant screens 299

Unit III Interactions, Pathways, and Networks

- 10 Gene interactions: Suppressors and synthetic enhancers 333
- 11 Epistasis and genetic pathways 381
- 12 Pathways, networks, and phenotypes 415

Glossary 459

Index 467