

Contents at a Glance

Introduction 1

Part I: Getting Started with Neurobiology..... 5

Chapter 1: Welcome to the World of Neurobiology	7
Chapter 2: Building Neurons from Molecules	23
Chapter 3: Gating the Membrane: Ion Channels and Membrane Potentials	47
Chapter 4: Sending Signals: Chemical Release and Electrical Activation.....	67

Part II: Neuroanatomy: Organizing the Nervous System 83

Chapter 5: Movement Basics: Muscles and Motor Neurons	85
Chapter 6: The Spinal Cord and the Autonomic Nervous System.....	101
Chapter 7: The Busy Brain: Brainstem, Limbic System, Hypothalamus, and Reticular Formation	123
Chapter 8: Generating Behavior: Basal Ganglia, Thalamus, Motor Cortex, and Frontal Cortex.....	145
Chapter 9: Topping It Off: The Neocortex	159

Part III: Perceiving the World, Thinking, Learning, and Remembering 183

Chapter 10: Looking at Vision and Hearing.....	185
Chapter 11: Feeling, Smelling, and Tasting.....	211
Chapter 12: Memory and Learning	233
Chapter 13: The Frontal Lobes and Executive Brain.....	253
Chapter 14: Language, Intelligence, Emotions, and Consciousness.....	265

Part IV: Developmental, Neurological, and Mental Disorders and Treatments 283

Chapter 15: Developing the Brain and Nervous System.....	285
Chapter 16: Movement Disorders.....	309
Chapter 17: Brain Dysfunction and Mental Illness	325
Chapter 18: Making Better Brains.....	341

<i>Part V: The Part of Tens</i>	355
Chapter 19: The Ten Most Important Brain Circuits.....	357
Chapter 20: Ten Technologies Revolutionizing Brain Science	365
<i>Index</i>	373