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Cortex Histogenesis; Molecular Mechanisms of Neuronal Migration; Postembryonic and Adult Neurogenesis; Summary; Chapter 4: Determination and Differentiation; Transcriptional Hierarchies in Invariant Lineages; Spatial and Temporal Coordinates of Determination; Asymmetric Cell Divisions and Asymmetric Fate; Generating Complexity through Cellular Interactions
Specification and Differentiation through Cellular Interactions and Interactions with the Local Environment
Competence and Histogenesis; The Interplay of Intrinsic and Extrinsic Influences in Histogenesis; Interpreting Gradients and the Spatial Organization of Cell Types; Summary; Chapter 5: Axon Growth and Guidance; The Growth Cone; The Dynamic Cytoskeleton; What Do Growth Cones Grow On?; What Provides Directional Information to Growth Cones?; Cell Adhesion and Labeled Pathways; Repulsive Guidance; Chemotaxis, Gradients, and Local Information; The Optic Pathway; The Midline
Attraction and Repulsion: Desensitization and Adaptation
Signal Transduction; Summary; Chapter 6: Target Selection; Defasciculation; Target Recognition and Entry; Slowing Down and Branching; Border Patrol and Prevention of Inappropriate Targeting; Topographic Mapping; Chemospecificity and Ephrins; Shifting and Fine Tuning of Connections; The Third Dimension, Lamina-Specific Termination; Cellular and Synaptic Targeting; Sniffing Out Targets; Summary; Chapter 7: Naturally Occurring Neuron Death; What does Neuron Death Look Like?; Early Elimination of Progenitor Cells
How Many Differentiated Neurons Die?

Sommario/riassunto

Development of the Nervous System, Second Edition has been thoroughly revised and updated since the publication of the First Edition. It presents a broad outline of neural development principles as exemplified by key experiments and observations from past and recent times. The text is organized along a development pathway from the induction of the neural primordium to the emergence of behavior. It covers all the major topics including the patterning and growth of the nervous system, neuronal determination, axonal navigation and targeting, synapse formation and plasticity, and neuronal
