Developmental Neuroscience A Concise Introduction

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Neurobiology of Language Gregory Hickok 2015-08-15
Neurobiology of Language explores the study of language, a field that has seen tremendous progress in the last two decades. Key to this progress is the accelerating trend toward integration of neurobiological approaches with the more established understanding of language within cognitive psychology, computer science, and linguistics. This volume serves as the

definitive reference on the neurobiology of language, bringing these various advances together into a single volume of 100 concise entries. The organization includes sections on the field's major subfields, with each section covering both empirical data and theoretical perspectives. "Foundational" neurobiological coverage is also provided, including neuroanatomy, neurophysiology, genetics, linguistic, and psycholinguistic data, and models. Foundational reference for the current state of the field of the neurobiology of language Enables brain and language researchers and students to remain up-to-date in this fast-moving field that crosses many disciplinary and subdisciplinary boundaries Provides an accessible entry point for other scientists interested in the area, but not actively working in it – e.g., speech therapists, neurologists, and cognitive psychologists Chapters authored by world leaders in the field – the broadest, most expert coverage available

Glial Neurobiology - Alexei Verkhratsky 2007-09-04

"This volume is a very valuable and much needed contribution." –Quarterly Review of Biology AT LAST - A comprehensive, accessible textbook on glial neurobiology! Glial cells are the most numerous cells in the human brain but for many years have attracted little scientific attention. Neurophysiologists concentrated their research efforts instead, on neurones and neuronal networks because it was thought that they were the key elements responsible for higher brain function. Recent advances, however, indicate this isn’t exactly the case. Not only are astroglial cells the stem elements from which neurones are born, but they also control the development, functional activity and death of neuronal circuits. These ground-breaking developments have revolutionized our understanding of the human brain and the complex interrelationship of glial and neuronal networks in health and disease. Features of this

book: an accessible introduction to glial neurobiology including an overview of glial cell function and its active role in neural processes, brain function and nervous system pathology an exploration of all the major types of glial cells including: the astrocytes, oligodendrocytes and microglia of the ACNS and Schwann cells of the peripheral nervous system; the book also presents a broad overview of glial receptors and ion channels an investigation into the role of glial cells in various types of brain diseases including stroke, neurodegenerative diseases such as Alzheimer's, Parkinson's and Alexander's disease, brain oedema, multiple sclerosis and many more a wealth of illustrations, including unique images from the authors' own libraries of images, describing the main features of glial cells Written by two leading experts in the field, Glial Neurobiology provides a concise, authoritative introduction to glial physiology and pathology for undergraduate/postgraduate neuroscience, biomedical, medical, pharmacy, pharmacology, and neurology, neurosurgery and physiology students. It is also an invaluable resource for researchers in neuroscience, physiology, pharmacology and pharmaceutics.

Fundamentals of Computational Neuroscience Thomas Trappenberg 2010

The new edition of Fundamentals of Computational Neuroscience build on the success and strengths of the first edition. Completely redesigned and revised, it introduces the theoretical foundations of neuroscience with a focus on the nature of information processing in the brain.

Social Neuroscience and Public Health - Peter A. Hall 2013-08-18

The field of public health is primarily concerned with understanding and improving physical health from a large group perspective (i.e., communities and whole populations). The field of social neuroscience, on the other hand, is primarily concerned with examining brain-behavior relationships that unfold in a social

context. Both of these are rapidly developing fields of inquiry, and their boundaries have only recently begun to overlap. This book discusses collaborative research findings at the intersection of social neuroscience and public health that promise to fundamentally change the way scientists, public health practitioners, and the general public view physical health within the larger social context. Eighteen chapters are organized under the following major sections: cognition and health outcomes; neuroscientific aspects of health communication; health behavior and the neurobiology of self-regulation; neurobiological processes in health decision making; ecological and social context; neuroscience methods; and future directions.

Developmental Neuroscience - Susan E. Fahrbach 2013-08-11

This textbook offers a concise introduction to the exciting field of developmental neuroscience, a discipline concerned with the mechanisms by which complex nervous systems emerge during embryonic growth. Bridging the divide between basic and clinical research, it captures the extraordinary progress that has been achieved in the field. It provides an opportunity for students to apply and extend what they have learned in their introductory biology courses while also directing them to the primary literature. This accessible textbook is unique in that it takes an in-depth look at a small number of key model systems and signaling pathways. The book's chapters logically follow the sequence of human brain development and explain how information obtained from models such as Drosophila and zebrafish addresses topics relevant to this area. Beginning with a brief presentation of methods for studying neural development, the book provides an overview of human development, followed by an introduction to animal models. Subsequent chapters consider the molecular mechanisms of selected earlier and later events, neurogenesis, and formation of synapses. Glial cells and postembryonic maturation of the

nervous system round out later chapters. The book concludes by discussing the brain basis of human intellectual disabilities viewed from a developmental perspective. Focusing on the mechanistic and functional, this textbook will be invaluable to biology majors, neuroscience students, and premedical and pre-health-professions students. An accessible introduction to nervous system development Suitable for one-semester developmental neuroscience course Thorough review of key model systems Selective coverage of topics allows professors to personalize courses Investigative reading exercises at the end of each chapter An online illustration package is available to professors

Cognitive Development for Academic Achievement - James P. Byrnes 2021-09-01

This integrative text spotlights what educators need to know about children's cognitive development across grade levels (PreK-12) and content areas. The book provides a concise introduction to developmental neuroscience and theories of learning. Chapters on general cognitive abilities probe such crucial questions as what children are capable of remembering at different ages, what explains differences in effort and persistence, and how intelligence and aptitudes relate to learning. Domain-specific chapters focus on the development of key academic skills in reading, writing, math, science, and history. Multiple influences on academic achievement and motivation are explored, including school, family, cultural, and socioeconomic factors. Each chapter concludes with clear implications for curriculum and instruction.

Development of the Nervous System - Dan H. Sanes 2019-06-13

Development of the Nervous System, Fourth Edition provides an informative and up-to-date account of our present understanding of the basic principles of neural development as exemplified by key experiments and observations from past and recent times. This

book reflects the advances made over the last few years, demonstrating their promise for both therapy and molecular understanding of one of the most complex processes in animal development. This information is critical for neuroscientists, developmental biologists, educators, and students at various stages of their career, providing a clear presentation of the frontiers of this exciting and medically important area of developmental biology. The book includes a basic introduction to the relevant aspects of neural development, covering all the major topics that form the basis of a comprehensive, advanced undergraduate and graduate curriculum, including the patterning and growth of the nervous system, neuronal determination, axonal navigation and targeting, neuron survival and death, synapse formation and plasticity. Provides broad coverage of concepts and experimental strategies Includes full color schematics and photographs of critical experiments Outlines the molecular and genetic basis for most developmental events Written at a level that is appropriate for advanced undergraduates and beyond Includes designs of critical experiments that are easy to understand

The Stroke Book - Michel T. Torbey 2013-07-18

Designed for use by busy professionals who need quick answers, this revised and updated second edition of The Stroke Book is a concise and practical reference for anyone involved in managing critically ill cerebrovascular patients. • Covers a wide range of common conditions such as ischemic and hemorrhagic strokes, subarachnoid hemorrhages and intracranial aneurysms • Provides focused protocols for assessing and treating stroke patients in the emergency room, intensive care unit or general hospital setting • A new chapter summarizes key clinical trials for stroke therapies • User-friendly format • Packed with algorithms, tables and summary boxes for immediate access to key information • A color plate section illustrates

key pathology and diagnostic imaging Written by experienced contributors from leading stroke centers, this is an essential companion for navigating stroke-related clinical situations successfully and making informed decisions about treatment.

Autism - Sue Fletcher-Watson 2019-01-24

Based on Francesca Happé's best-selling textbook, Autism: An Introduction to Psychological Theory, this completely new edition provides a concise overview of contemporary psychological theories about autism. Fletcher-Watson and Happé explore the relationship between theories of autism at psychological (cognitive), biological and behavioural levels, and consider their clinical and educational impact. The authors summarise what is known about the biology and behavioural features of autism, and provide concise but comprehensive accounts of all influential psychological models including 'Theory of Mind' (ToM) models, early social development models and alternative information processing models such as 'weak central coherence' theory. The book also discusses more recent attempts to understand autism, including the 'Double Empathy Problem' and Bayesian theories. In each case, the authors describe the theory, review the evidence and provide critical analysis of its value and impact. Recognising the multiplicity of theoretical views, and rapidly changing nature of autism research, each chapter considers current debates and major questions that remain for the future. Importantly, the book includes the voices of autistic people, including parents and practitioners, who were asked to provide commentaries on each chapter, helping to contextualise theory and research evidence with accounts of real-life experience. The book embraces neurodiversity whilst recognising the real needs of autistic people and their families. Thus Autism: A New Introduction to Psychological Theory and Current Debate

provides the reader with a critical overview of psychological theory but also embeds this within community perspectives, making it a relevant and progressive contribution to understanding autism, and essential reading for students and practitioners across educational, clinical and social settings.

Foundations of Neuroscience - Casey Henley 2021

Concise Text of Neuroscience - Robert E. Kingsley 2000

Although each chapter has been heavily revised, this edition of Concise Text of Neuroscience adheres to the goals of the first edition--providing practical, concise, and integrated information on neuroscience with an emphasis on clinical neurology. Case histories of real patients help illustrate neurologic principles. Several new features include--a new chapter summary format for quicker review of chapters, key term etymologies, an expanded glossary, a high-resolution, multiplanar MRI atlas, "Further Application" questions with answers following each case history.

Foundations of Behavioral Neuroscience - Neil R. Carlson 2014

"Helps apply the research findings of behavioral neuroscience to daily life. " The ninth edition of "Foundations of Behavioral Neuroscience" offers a concise introduction to behavioral neuroscience. The text incorporates the latest studies and research in the rapidly changing fields of neuroscience and physiological psychology. The theme of strategies of learning helps readers apply these research findings to daily life. "Foundations of Behavioral Neuroscience "is an ideal choice for the instructor who wants a concise text with a good balance of human and animal studies. MyPsychLab is an integral part of the Carlson program. Key learning applications include the MyPsychLab Brain. Teaching & Learning Experience "Personalize Learning""

"MyPsychLab is an online homework, tutorial, and assessment program. It helps students prepare for class and instructor gauge individual and class performance."Improve Critical Thinking"" "Each chapter begins with a list of Learning Objectives that also serve as the framework for the Study Guide that accompanies this text. "Engage Students"" "An Interim Summary follows each major section of the book. The summaries provide useful reviews and also break each chapter into manageable chunks. "Explore Theory/Research"" "APS Reader, "Current Directions in Biopsychology" in MyPsychLab "Support Instructors"" " A full set of supplements, including MyPsychLab, provides instructors with all the resources and support they need. 0205962092 / 9780205962099 Foundations of Behavioral Neuroscience Plus NEW MyPsychLab with eText -- Access Card Package Package consists of: 0205206514 / 9780205206513 NEW MyPsychLab with Pearson eText -- Valuepack Access Card 0205940242 / 9780205940240 Foundations of Behavioral Neuroscience

Science - John Michels 2007

The Serotonin System - Mark Tricklebank 2019-03-15

The Serotonin System: History, Neuropharmacology, and Pathology provides an up-to-date accounting on the physiology and pathophysiology of serotonin and the role it plays in behavioral functions. In addition, the book explores the potential roles of 5-HT1 in neurodevelopmental disorders and summarizes the history of the discovery and development of serotonergic drugs for the treatment of neuropsychiatric disorders. This concise, yet thorough, volume is the perfect introduction to this critical neurotransmitter. It is ideal for students and researchers new to the study of behavior, neuropsychiatry or neuropharmacology, but is also a great resource for established investigators who want a greater

perspective on serotonin. Examines the role of serotonin in physiological functions and neuropsychiatric disorders Provides in-depth knowledge on all aspects of the serotonin system Explores serotonergic receptors as targets for both current and new therapeutic compounds

Netter's Atlas of Neuroscience E-Book - David L. Felten 2015-09-28

Ideal for students of neuroscience and neuroanatomy, the new edition of Netter's Atlas of Neuroscience combines the didactic well-loved illustrations of Dr. Frank Netter with succinct text and clinical points, providing a highly visual, clinically oriented guide to the most important topics in this subject. The logically organized content presents neuroscience from three perspectives: an overview of the nervous system, regional neuroscience, and systemic neuroscience, enabling you to review complex neural structures and systems from different contexts. You may also be interested in: A companion set of flash cards, Netter's Neuroscience Flash Cards, 3rd Edition, to which the textbook is cross-referenced. Coverage of both regional and systemic neurosciences allows you to learn structure and function in different and important contexts. Combines the precision and beauty of Netter and Netter-style illustrations to highlight key neuroanatomical concepts and clinical correlations. Reflects the current understanding of the neural components and supportive tissue, regions, and systems of the brain, spinal cord, and periphery. Uniquely informative drawings provide a quick and memorable overview of anatomy, function, and clinical relevance. Succinct and useful format utilizes tables and short text to offer easily accessible "at-a-glance" information. Provides an overview of the basic features of the spinal cord, brain, and peripheral nervous system, the vasculature, meninges and cerebrospinal fluid, and basic development. Integrates the peripheral and central aspects of the nervous system. Bridges neuroanatomy and

neurology through the use of correlative radiographs. Highlights cross-sectional brain stem anatomy and side-by-side comparisons of horizontal sections, CTs and MRIs. Expanded coverage of cellular and molecular neuroscience provides essential guidance on signaling, transcription factors, stem cells, evoked potentials, neuronal and glial function, and a number of molecular breakthroughs for a better understanding of normal and pathologic conditions of the nervous system. Micrographs, radiologic imaging, and stained cross sections supplement illustrations for a comprehensive visual understanding. Increased clinical points -- from sleep disorders and inflammation in the CNS to the biology of seizures and the mechanisms of Alzheimer's -- offer concise insights that bridge basic neuroscience and clinical application.

Minds, Brains, and Law - Michael S. Pardo 2015-06-15

Pardo and Patterson assess the philosophical questions that arise when neuroscientific research and technology are applied in the legal system. It examines the arguments favouring the increased use of neuroscience in law, the means for assessing its reliability in legal proceedings, and the integration of neuroscientific research into substantive legal doctrines. The book uses its explorations to inform a corrective inquiry into the mistaken inferences and conceptual errors that arise from mismatched concepts, such as the mental disconnect of what constitutes 'lying' on a lie detection test.

Psychology: A Concise Introduction - Richard A. Griggs 2019-11-21

This exceptionally concise volume offers a rich survey of the field's fundamental research and concepts at an unbeatable price--with formats for less than $40! The text also includes a robust media and supplements package for instructors and students, including LaunchPad. No other text/media resource for the course offers such an attractive combination of authority and

affordability. Richard Griggs has updated the book throughout, especially in the chapters on neuroscience, sensation and perception, learning, social psychology, and abnormal psychology--all while maintaining the book's trademark brevity.

Assessments, Treatments and Modeling in Aging and Neurological Disease - Colin R. Martin 2021-06-28

Assessments, Treatments and Modeling in Aging and Neurological Disease: The Neuroscience of Aging is a comprehensive reference on the diagnosis and management of neurological aging and associated disorders. The book discusses the mechanisms underlying neurological aging and provides readers with a detailed introduction to the aging of neural connections and complexities in biological circuitries, as well as the interactions between genetics, epigenetics and other micro-environmental processes. It also examines pharmacological and non-pharmacological interventions of age-related conditions that affect the brain, including Alzheimer's, stroke and multiple sclerosis. Provides the most comprehensive coverage of the broad range of topics related to the neuroscience of aging Features sections on diagnosis and biomarkers of neurological aging, Alzheimer's and stroke Contains an abstract, key facts, a mini dictionary of terms, and summary points in each chapter Focuses on neurological diseases and conditions linked to aging, environmental factors and clinical recommendations Includes more than 500 illustrations and tables

Critical Thinking - Tracy Bowell 2002

A much-needed guide to thinking critically for oneself and how to tell a good argument from a bad one. Includes topical examples from politics, sport, medicine, music, chapter summaries, glossary and exercises.

Genome Research - 2009

Neuroscience for Psychologists - Marc L. Zeise

2020-11-30

This textbook is intended to give an introduction to neuroscience for students and researchers with no biomedical background. Primarily written for psychologists, this volume is a digest giving a rapid but solid overview for people who want to inform themselves about the core fields and core concepts in neuroscience but don't need so many anatomical or biochemical details given in "classical" textbooks for future doctors or biologists. It does not require any previous knowledge in basic science, such as physics or chemistry. On the other hand, it contains chapters that do go beyond the issues dealt with in most neuroscience textbooks: One chapter about mathematical modelling in neuroscience and another about "tools of neuroscience" explaining important methods. The book is divided in two parts. The first part presents core concepts in neuroscience: Electrical Signals in the Nervous System Basics of Neuropharmacology Neurotransmitters The second part presents an overview of the neuroscience fields of special interest for psychology: Clinical Neuropharmacology Inputs, Outputs and Multisensory Processing Neural Plasticity in Humans Mathematical Modeling in Neuroscience Subjective Experience and its Neural Basis The last chapter, "Tools of Neuroscience" presents important methodogical approaches in neuroscience with a special focus on brain imaging. Neuroscience for Psychologists aims to fill a gap in the teaching literature by providing an introductory text for psychology students that can also be used in other social sciences courses, as well as a complement in courses of neurophysiology, neuropharmacology or similar in careers outside as well as inside biological or medical fields. Students of data sciences, chemistry and physics as well as engineering interested in neuroscience will also profit from the text.

Glial Neurobiology - Alexei Verkhratsky 2007-08-20

"This volume is a very valuable and much needed contribution." –Quarterly Review of Biology AT LAST - A comprehensive, accessible textbook on glial neurobiology! Glial cells are the most numerous cells in the human brain but for many years have attracted little scientific attention. Neurophysiologists concentrated their research efforts instead, on neurones and neuronal networks because it was thought that they were the key elements responsible for higher brain function. Recent advances, however, indicate this isn’t exactly the case. Not only are astroglial cells the stem elements from which neurones are born, but they also control the development, functional activity and death of neuronal circuits. These ground-breaking developments have revolutionized our understanding of the human brain and the complex interrelationship of glial and neuronal networks in health and disease. Features of this book: an accessible introduction to glial neurobiology including an overview of glial cell function and its active role in neural processes, brain function and nervous system pathology an exploration of all the major types of glial cells including: the astrocytes, oligodendrocytes and microglia of the ACNS and Schwann cells of the peripheral nervous system; the book also presents a broad overview of glial receptors and ion channels an investigation into the role of glial cells in various types of brain diseases including stroke, neurodegenerative diseases such as Alzheimer's, Parkinson's and Alexander's disease, brain oedema, multiple sclerosis and many more a wealth of illustrations, including unique images from the authors' own libraries of images, describing the main features of glial cells Written by two leading experts in the field, Glial Neurobiology provides a concise, authoritative introduction to glial physiology and pathology for undergraduate/postgraduate neuroscience, biomedical, medical, pharmacy, pharmacology, and neurology, neurosurgery and physiology students. It is also an invaluable

resource for researchers in neuroscience, physiology, pharmacology and pharmaceutics.

Artificial Cognitive Systems - David Vernon 2014-10-17

A concise introduction to a complex field, bringing together recent work in cognitive science and cognitive robotics to offer a solid grounding on key issues. This book offers a concise and accessible introduction to the emerging field of artificial cognitive systems. Cognition, both natural and artificial, is about anticipating the need for action and developing the capacity to predict the outcome of those actions. Drawing on artificial intelligence, developmental psychology, and cognitive neuroscience, the field of artificial cognitive systems has as its ultimate goal the creation of computer-based systems that can interact with humans and serve society in a variety of ways. This primer brings together recent work in cognitive science and cognitive robotics to offer readers a solid grounding on key issues. The book first develops a working definition of cognitive systems—broad enough to encompass multiple views of the subject and deep enough to help in the formulation of theories and models. It surveys the cognitivist, emergent, and hybrid paradigms of cognitive science and discusses cognitive architectures derived from them. It then turns to the key issues, with chapters devoted to autonomy, embodiment, learning and development, memory and prospection, knowledge and representation, and social cognition. Ideas are introduced in an intuitive, natural order, with an emphasis on the relationships among ideas and building to an overview of the field. The main text is straightforward and succinct; sidenotes drill deeper on specific topics and provide contextual links to further reading.

Cognitive Neuroscience - Marie T. Banich 2018-04-05

Updated fully, this accessible and comprehensive text highlights the most

important theoretical, conceptual and methodological issues in cognitive neuroscience. Written by two experienced teachers, the consistent narrative ensures that students link concepts across chapters, and the careful selection of topics enables them to grasp the big picture without getting distracted by details. Clinical applications such as developmental disorders, brain injuries and dementias are highlighted. In addition, analogies and examples within the text, opening case studies, and 'In Focus' boxes engage students and demonstrate the relevance of the material to real-world concerns. Students are encouraged to develop the critical thinking skills that will enable them to evaluate future developments in this fast-moving field. A new chapter on Neuroscience and Society considers how cognitive neuroscience issues relate to the law, education, and ethics, highlighting the clinical and real-world relevance. An expanded online package includes a test bank.

The Cambridge Encyclopedia of Child Development - Brian Hopkins 2017-10-19
Updated and expanded to 124 entries, The Cambridge Encyclopedia of Child Development remains the authoritative reference in the field.

Building Brains - David J. Price 2017-09-25
Provides a highly visual, readily accessible introduction to the main events that occur during neural development and their mechanisms Building Brains: An Introduction to Neural Development, 2nd Edition describes how brains construct themselves, from simple beginnings in the early embryo to become the most complex living structures on the planet. It explains how cells first become neural, how their proliferation is controlled, what regulates the types of neural cells they become, how neurons connect to each other, how these connections are later refined under the influence of neural activity, and why some neurons normally die. This student-friendly guide stresses and justifies the generally-held belief that a greater

knowledge of how nervous systems construct themselves will help us find new ways of treating diseases of the nervous system that are thought to originate from faulty development, such as autism spectrum disorders, epilepsy, and schizophrenia. A concise, illustrated guide focusing on core elements and emphasizing common principles of developmental mechanisms, supplemented by suggestions for further reading Text boxes provide detail on major advances, issues of particular uncertainty or controversy, and examples of human diseases that result from abnormal development Introduces the methods for studying neural development, allowing the reader to understand the main evidence underlying research advances Offers a balanced mammalian/non-mammalian perspective (and emphasizes mechanisms that are conserved across species), drawing on examples from model organisms like the fruit fly, nematode worm, frog, zebrafish, chick, mouse and human Associated Website includes all the figures from the textbook and explanatory movies Filled with full-colorartwork that reinforces important concepts; an extensive glossary and definitions that help readers from different backgrounds; and chapter summaries that stress important points and aid revision, Building Brains: An Introduction to Neural Development, 2nd Edition is perfect for undergraduate students and postgraduates who may not have a background in neuroscience and/or molecular genetics. “This elegant book ranges with ease and authority over the vast field of developmental neuroscience. This excellent textbook should be on the shelf of every neuroscientist, as well as on the reading list of every neuroscience student.” —Sir Colin Blakemore, Oxford University “With an extensive use of clear and colorful illustrations, this book makes accessible to undergraduates the beauty and complexity of neural development. The book fills a void in undergraduate neuroscience curricula.” —Professor Mark Bear, Picower

Institute, MIT. Highly Commended, British Medical Association Medical Book Awards 2012 Published with the New York Academy of Sciences

The Brain - Charles Watson 2010-09-20

The authors of the most cited neuroscience publication, The Rat Brain in Stereotaxic Coordinates, have written this introductory textbook for neuroscience students. The text is clear and concise, and offers an excellent introduction to the essential concepts of neuroscience. Based on contemporary neuroscience research rather than old-style medical school neuroanatomy Thorough treatment of motor and sensory systems A detailed chapter on human cerebral cortex The neuroscience of consciousness, memory, emotion, brain injury, and mental illness A comprehensive chapter on brain development A summary of the techniques of brain research A detailed glossary of neuroscience terms Illustrated with over 130 color photographs and diagrams This book will inspire and inform students of neuroscience. It is designed for beginning students in the health sciences, including psychology, nursing, biology, and medicine. Clearly and concisely written for easy comprehension by beginning students Based on contemporary neuroscience research rather than the concepts of old-style medical school neuroanatomy Thorough treatment of motor and sensory systems A detailed chapter on human cerebral cortex Discussion of the neuroscience of conscience, memory, cognitive function, brain injury, and mental illness A comprehensive chapter on brain development A summary of the techniques of brain research A detailed glossary of neuroscience terms Illustrated with over 100 color photographs and diagrams

The Feeling Brain: The Biology and Psychology of Emotions - Elizabeth Johnston 2015-05-11

A reader-friendly exploration of the science of emotion. After years of neglect by both

mainstream biology and psychology, the study of emotions has emerged as a central topic of scientific inquiry in the vibrant new discipline of affective neuroscience. Elizabeth Johnston and Leah Olson trace how work in this rapidly expanding field speaks to fundamental questions about the nature of emotion: What is the function of emotions? What is the role of the body in emotions? What are "feelings," and how do they relate to emotions? Why are emotions so difficult to control? Is there an emotional brain? The authors tackle these questions and more in this "tasting menu" of cutting-edge emotion research. They build their story around the path-breaking 19th century works of biologist Charles Darwin and psychologist and philosopher William James. James's 1884 article "What Is an Emotion?" continues to guide contemporary debate about minds, brains, and emotions, while Darwin's treatise on "The Expression of Emotions in Animals and Humans" squarely located the study of emotions as a critical concern in biology. Throughout their study, Johnston and Olson focus on the key scientists whose work has shaped the field, zeroing in on the most brilliant threads in the emerging tapestry of affective neuroscience. Beginning with early work on the brain substrates of emotion by such workers such as James Papez and Paul MacLean, who helped define an emotional brain, they then examine the role of emotion in higher brain functions such as cognition and decision-making. They then investigate the complex interrelations of emotion and pleasure, introducing along the way the work of major researchers such as Antonio Damasio and Joseph LeDoux. In doing so, they braid diverse strands of inquiry into a lucid and concise introduction to this burgeoning field, and begin to answer some of the most compelling questions in the field today. How does the science of "normal" emotion inform our understanding of emotional disorders? To what extent can we regulate our emotions? When can

we trust our emotions and when might they lead us astray? How do emotions affect our memories, and vice versa? How can we best describe the relationship between emotion and cognition? Johnston and Olson lay out the most salient questions of contemporary affective neuroscience in this study, expertly situating them in their biological, psychological, and philosophical contexts. They offer a compelling vision of an increasingly exciting and ambitious field for mental health professionals and the interested lay audience, as well as for undergraduate and graduate students.

Conn's Translational Neuroscience - Paul Michael Conn 2016-09-28

Conn's Translational Neuroscience provides a comprehensive overview reflecting the depth and breadth of the field of translational neuroscience, with input from a distinguished panel of basic and clinical investigators. Progress has continued in understanding the brain at the molecular, anatomic, and physiological levels in the years following the 'Decade of the Brain,' with the results providing insight into the underlying basis of many neurological disease processes. This book alternates scientific and clinical chapters that explain the basic science underlying neurological processes and then relates that science to the understanding of neurological disorders and their treatment. Chapters cover disorders of the spinal cord, neuronal migration, the autonomic nervous system, the limbic system, ocular motility, and the basal ganglia, as well as demyelinating disorders, stroke, dementia and abnormalities of cognition, congenital chromosomal and genetic abnormalities, Parkinson's disease, nerve trauma, peripheral neuropathy, aphasias, sleep disorders, and myasthenia gravis. In addition to concise summaries of the most recent biochemical, physiological, anatomical, and behavioral advances, the chapters summarize current findings on neuronal gene expression

and protein synthesis at the molecular level. Authoritative and comprehensive, Conn's Translational Neuroscience provides a fully up-to-date and readily accessible guide to brain functions at the cellular and molecular level, as well as a clear demonstration of their emerging diagnostic and therapeutic importance. Provides a fully up-to-date and readily accessible guide to brain functions at the cellular and molecular level, while also clearly demonstrating their emerging diagnostic and therapeutic importance Features contributions from leading global basic and clinical investigators in the field Provides a great resource for researchers and practitioners interested in the basic science underlying neurological processes Relates and translates the current science to the understanding of neurological disorders and their treatment

Learning and Memory: A Comprehensive Reference - 2017-07-07

Learning and Memory: A Comprehensive Reference, Second Edition is the authoritative resource for scientists and students interested in all facets of learning and memory. This updated edition includes chapters that reflect the state-of-the-art of research in this area. Coverage of sleep and memory has been significantly expanded, while neuromodulators in memory processing, neurogenesis and epigenetics are also covered in greater detail. New chapters have been included to reflect the massive increase in research into working memory and the educational relevance of memory research. No other reference work covers so wide a territory and in so much depth. Provides the most comprehensive and authoritative resource available on the study of learning and memory and its mechanisms Incorporates the expertise of over 150 outstanding investigators in the field, providing a 'one-stop' resource of reputable information from world-leading scholars with easy cross-referencing of related articles to promote understanding and further research Includes further reading for each

chapter that helps readers continue their research Includes a glossary of key terms that is helpful for users who are unfamiliar with neuroscience terminology

Adult Attachment - Omri Gillath 2016-03-29 Adult Attachment: A Concise Introduction to Theory and Research is an easy-to-read and highly accessible reference on attachment that deals with many of the key concepts and topics studied within attachment theory. This book is comprised of a series of chapters framed by common questions that are typically asked by novices entering the field of attachment. The content of each chapter focuses on answering this overarching question. Topics on the development of attachment are covered from different levels of analysis, including species, individual, and relationship levels, working models of attachment, attachment functions and hierarchies, attachment stability and change over time and across situations, relationship contexts, the cognitive underpinnings of attachment and its activation of enhancement via priming, the interplay between the attachment behavioral system and other behavioral systems, the effects of context on attachment, the contribution of physiology/neurology and genetics to attachment, the associations/differences between attachment and temperament, the conceptualization and measurement of attachment, and the association between attachment and psychopathology/therapy. Uses a question-and-answer format to address the most important topics within attachment theory Presents information in a simple, easy-to-understand way to ensure accessibility for novices in the field of attachment Covers the main concepts and issues that relate to attachment theory, thus ensuring readers develop a strong foundation in attachment theory that they can then apply to the study of relationships Addresses future directions in the field of attachment theory Concisely covers

material, ensuring scholars and professionals can quickly get up-to-speed with the most recent research

Diagnosis, Management and Modeling of Neurodevelopmental Disorders Colin R. Martin 2021-05-29

Diagnosis, Management and Modeling of Neurodevelopmental Disorders: The Neuroscience of Development is a comprehensive reference on the diagnosis and management of neurodevelopment and associated disorders. The book discusses the mechanisms underlying neurological development and provides readers with a detailed introduction to the neural connections and complexities in biological circuitries, as well as the interactions between genetics, epigenetics and other micro-environmental processes. In addition, the book also examines the pharmacological and non-pharmacological interventions of development-related conditions. Provides the most comprehensive coverage of the broad range of topics relating to the neuroscience of aging Features sections on the genetics that influences aging and diseases of aging Contains an abstract, key facts, a mini dictionary of terms, and summary points in each chapter Focuses on neurological diseases and conditions linked to aging, environmental factors and clinical recommendations Includes more than 500 illustrations and tables

Zero to Birth - William A. Harris 2022-05-03

A revelatory tale of how the human brain develops, from conception to birth and beyond By the time a baby is born, its brain is equipped with billions of intricately crafted neurons wired together through trillions of interconnections to form a compact and breathtakingly efficient supercomputer. Zero to Birth takes you on an extraordinary journey to the very edge of creation, from the moment of an egg's fertilization through each step of a human brain's development in the womb—and even a little beyond. As pioneering experimental

neurobiologist W. A. Harris guides you through the process of how the brain is built, he takes up the biggest questions that scientists have asked about the developing brain, describing many of the thrilling discoveries that were foundational to our current understanding. He weaves in a remarkable evolutionary story that begins billions of years ago in the Proterozoic eon, when multicellular animals first emerged from single-cell organisms, and reveals how the growth of a fetal brain over nine months reflects the brain's evolution through the ages. Our brains have much in common with those of other animals, and Harris offers an illuminating look at how comparative animal studies have been crucial to understanding what makes a human brain human. An unforgettable chronicle of one of nature's greatest achievements, Zero to Birth describes how the brain's incredible feat of orchestrated growth ensures that every brain is unique, and how breakthroughs at the frontiers of science are helping us to decode many traits that only reveal themselves later in life.

Fundamental Neuroscience - Larry Squire 2008-04-02

Fundamental Neuroscience, 3rd Edition introduces graduate and upper-level undergraduate students to the full range of contemporary neuroscience. Addressing instructor and student feedback on the previous edition, all of the chapters are rewritten to make this book more concise and student-friendly than ever before. Each chapter is once again heavily illustrated and provides clinical boxes describing experiments, disorders, and methodological approaches and concepts. Capturing the promise and excitement of this fast-moving field, Fundamental Neuroscience, 3rd Edition is the text that students will be able to reference throughout their neuroscience careers! New to this edition: 30% new material including new chapters on Dendritic Development and Spine Morphogenesis, Chemical Senses, Cerebellum, Eye Movements, Circadian Timing, Sleep and

Dreaming, and Consciousness Additional text boxes describing key experiments, disorders, methods, and concepts Multiple model system coverage beyond rats, mice, and monkeys Extensively expanded index for easier referencing

Psychology - Richard A. Griggs 2008-02-15
The updated 2nd edition of this brief introduction to Psychology, is more accessible and ideal for short courses. This is a brief, accessible introductory psychology textbook. The updated 2nd edition of this clear and brief introduction to Psychology is written by the award-winning lecturer and author Richard Griggs. The text is written in an engaging style and presents a selection of carefully chosen core concepts in psychology, providing solid topical coverage without drowning the student in a sea of details.

The Wiley Blackwell Handbook of Forensic Neuroscience - Anthony R. Beech 2018-01-26
Explores how the explosion of neuroscience-based evidence in recent years has led to a fundamental change in how forensic psychology can inform working with criminal populations. This book communicates knowledge and research findings in the neurobiological field to those who work with offenders and those who design policy for offender rehabilitation and criminal justice systems, so that practice and policy can be neurobiologically informed, and research can be enhanced. Starting with an introduction to the subject of neuroscience and forensic settings, The Wiley Blackwell Handbook of Forensic Neuroscience then offers in-depth and enlightening coverage of the neurobiology of sex and sexual attraction, aggressive behavior, and emotion regulation; the neurobiological bases to risk factors for offending such as genetics, developmental, alcohol and drugs, and mental disorders; and the neurobiology of offending, including psychopathy, antisocial personality disorders, and violent and sexual offending. The book also covers rehabilitation

techniques such as brain scanning, brain-based therapy for adolescents, and compassion-focused therapy. The book itself: Covers a wide array of neuroscience research Chapters by renowned neuroscientists and criminal justice experts Topics covered include the neurobiology of aggressive behavior, the neuroscience of deception, genetic contributions to psychopathy, and neuroimaging-guided treatment Offers conclusions for practitioners and future directions for the field. The Handbook of Forensic Neuroscience is a welcome book for all researchers, practitioners, and postgraduate students involved with forensic psychology, neuroscience, law, and criminology.

Medical Neurobiology Peggy Mason 2017

This textbook guides the medical student, regardless of background or intended specialty, through the anatomy and function of the human nervous system. In writing specifically for medical students, the author concentrates on the neural contributions to common diseases, whether neurological or not, and omits topics without clinical relevance.

Cognitive Neuroscience R. E. Passingham 2016

This volume describes the new field of cognitive neuroscience - the study of what happens in the brain when we perceive, think, reason, remember, and act. Focusing on the human brain, Passingham looks at the most recent research in the field, the modern brain imaging technologies, and what the images can and can't tell us.

Representing Development - David Marco Carre 2016-07-15

Representing Development presents the different social representations that have formed the idea of development in Western thinking over the past three centuries. Offering an acute perspective on the current state of developmental science and providing constructive insights into future pathways, the book draws together twelve contributors with a variety of multidisciplinary and international

perspectives to focus upon development in fields including biology, psychology and sociology. Chapters and commentaries in this volume present a variety of perspectives surrounding social representation and development, addressing their contemporary enactments and reflecting on future theoretical and empirical directions. The first section of the book provides an historical account of early representations of development that, having come from life science, has shaped the way in which developmental science has approached development. Section two focuses upon the contemporary issues of developmental psychology, neuroscience and developmental science at large. The final section offers a series of commentaries pointing to the questions opened by the previous chapters, looking to outline the future lines of developmental thinking. This book will be of particular interest to child psychologists, educational psychologists and sociologists or historians of science, as well as academics and students interested in developmental and life sciences.

Developmental Neuroscience Susan E. Fahrbach 2013-08-11

A concise introductory textbook on the development of the nervous system This textbook offers a concise introduction to the exciting field of developmental neuroscience, a discipline concerned with the mechanisms by which complex nervous systems emerge during embryonic growth. Bridging the divide between basic and clinical research, it captures the extraordinary progress that has been achieved in the field. It provides an opportunity for students to apply and extend what they have learned in their introductory biology courses while also directing them to the primary literature. This accessible textbook is unique in that it takes an in-depth look at a small number of key model systems and signaling pathways. The book's chapters logically follow the sequence of human brain development and explain how information

obtained from models such as Drosophila and zebrafish addresses topics relevant to this area. Beginning with a brief presentation of methods for studying neural development, the book provides an overview of human development, followed by an introduction to animal models. Subsequent chapters consider the molecular mechanisms of selected earlier and later events, neurogenesis, and formation of synapses. Glial cells and postembryonic maturation of the nervous system round out later chapters. The book concludes by discussing the brain basis of human intellectual disabilities viewed from a developmental perspective. Focusing on the mechanistic and functional, this textbook will be invaluable to biology majors, neuroscience students, and premedical and pre-health-professions students. An accessible introduction to nervous system development Suitable for one-semester developmental neuroscience course Thorough review of key model systems Selective coverage of topics allows professors to personalize courses Investigative reading exercises at the end of each chapter An online illustration package is available to professors