[Book] Medical Neurobiology

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Medical Neurobiology - Peggy Mason - 2017-03-15
Medical Neurobiology, Second Edition continues the work of Dr. Peggy Mason as one of the few single author textbooks available. Written in an engaging style for the vast majority of medical students who will choose to specialize in internal medicine, orthopedics, oncology, cardiology, emergency medicine, and the like, as well as the student interested in neurology, psychiatry, or ophthalmology, this textbook provides a sturdy scaffold upon which a more detailed specialized knowledge can be built. Unlike other neuroscience textbooks, this new edition continues to focus exclusively on the human, covering everything from neuroanatomy to perception, motor control, homeostasis, and pathophysiology. Dr. Mason uniquely explains how disease and illness affect one's neurobiological functions and how they manifest in a person. Thoroughly updated as a result of student feedback, the topics are strictly honed and logically organized to meet the needs of the time-pressed student studying on-the-go. This textbook allows the reader to effortlessly absorb fundamental information critical to the practice of medicine through the use of memorable stories, metaphors, and clinical cases. Students will gain the tools and confidence to make novel connections between the nervous system and human disease. This is the perfect reference for any medical student, biology student, as well as any clinician looking to expand their knowledge of the human nervous system. New To the Second Edition of Medical Neurobiology: • New sections on cerebral palsy, brain cancer, traumatic brain injury, neurodegenerative diseases, aphasia, and Kallmann syndrome; • Incorporates easy to understand visual guides to brain development, eye movements, pupillary light reflex, pathways involved in Horner's syndrome; • Presents real-life dilemmas faced by clinicians are discussed from both the medical point of view and the patient's perspective; and • Additional reading lists are provided at the end of each chapter that include first-hand accounts of neurological cases and scientific discoveries (e.g. HM). Key Features Include: • Written in an accessible and narrative tone; • Uses metaphors and clinical examples to help the reader absorb the fundamentals of neurobiology; and • Highly illustrated with over 300 figures and tables for full comprehension of topics covered.

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Medical Neurobiology - Peggy Mason, PhD - 2011-05-26
Medical Neurobiology explains the fundamentals of the nervous system as it relates to human health. The text uses everyday examples to clarify neural function. The contribution of the nervous system to diverse and common medical disorders such as Parkinson's disease, hearing loss.myopia, hypertension, and asthma are explored.

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Neurobiology - Gordon M. Shepherd - 1983
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The Integrative Neurobiology of Affiliation - Carol Sue Carter - 1999
This book examines the biological, especially the neural, substrates of affiliation and related social behaviors. Affiliation refers to social behaviors that bring individuals closer together. This includes such associations as attachment, parent-offspring interactions, pair-bonding, and the building of coalitions. Affiliations provide a social matrix within which other behaviors, including reproduction and aggression, may occur. While reproduction and aggression also reduce the distance between individuals, their expression is regulated in part by the positive social fabric of affiliative behavior.Until recently, researchers have paid little attention to the regulatory physiology and neural processes that subserve affiliative behaviors. The integrative approach in this book reflects the constructive interactions between those who study behavior in the context of natural history and evolution and those who study the nervous system.The book contains the partial proceedings of a conference of the same title held in Washington, DC, in 1996. The full proceedings was published as part of the Annals of the York Academy of Sciences.

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Elements of Molecular Neurobiology - C. U. M. Smith - 2003-06-13
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Psychopharmacology by Brian Leonard. This book will be of particular interest to biomedical undergraduates undertaking a neuroscience unit, neuroscience postgraduates, physiologists, pharmacologists. It is also a useful basic reference for university libraries. Maurice Elphick, Queen Mary, University of London "I do like this book and it is the recommended textbook for my course in Molecular Neuroscience. The major strength of the book is the overall simplicity of the format both in terms of layout and diagrams."

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Principles of Neurobiology - Liqun Luo - 2020
"Principles of Neurobiology, Second Edition presents the major concepts of neuroscience with an emphasis on how we know what we know. The text is organized around a series of key experiments to illustrate how scientific progress is made and helps upper-level undergraduate and graduate students discover the relevant primary literature. Written by a single author in a clear and consistent writing style, each topic builds in complexity from electrophysiology to molecular genetics to systems level in a highly integrative approach. Students can fully engage with the content via thematically linked chapters and will be able to read the book in its entirety in a semester-long course. Principles of Neurobiology is accompanied by a rich package of online student and instructor resources including animations, figures in PowerPoint, and a Question Bank for adopting instructors"--

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Neurobiology of Addiction - George F. Koob - 2005-11-11

Neurobiology of Addiction is conceived as a current survey and synthesis of the most important findings in our understanding of the neurobiological mechanisms of addiction over the past 50 years. The book includes a scholarly introduction, thorough descriptions of animal models of addiction, and separate chapters on the neurobiological mechanisms of addiction for psychostimulants, opioids, alcohol, nicotine and cannabinoids. Key information is provided about the history, sources, and pharmacokinetics and psychopathology of addiction of each drug class, as well as the behavioral and neurobiological mechanism of action for each drug class at the molecular, cellular and neurocircuitry level of analysis. A chapter on neuroimaging and drug addiction provides a synthesis of exciting new data from neuroimaging in human addicts — a unique perspective unavailable from animal studies. The final chapters explore theories of addiction at the neurobiological and neuroadaptational level both from a historical and integrative perspective. The book incorporates diverse finding with an emphasis on integration and synthesis rather than discrepancies or differences in the literature. · Presents a unique perspective on addiction that emphasizes molecular, cellular and neurocircuitry changes in the transition to addiction · Synthesizes diverse findings on the neurobiology of addiction to provide a heuristic framework for future work · Features extensive documentation through numerous original figures and tables that that will be useful for understanding and teaching

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Neurobiology of Depression - Joao Luciano de Quevedo - 2019-01-03
Neurobiology of Depression: Road to Novel Therapeutics synthesizes the basic neurobiology of major depressive disorder with discussions on the most recent advances in research, including the interacting pathways implicated in the pathophysiology of MDD, omics technologies, genetic approaches, and the development of novel optogenetic approaches that are changing research perspectives and revolutionizing research into depression. These basic foundational understandings on the neurobiology underlying the disorder, along with a comprehensive summary of the most recent advances in research are combined in this book to aid advanced students and researchers in their understanding of MDD. Depression is one of the most common mental-health disorders caused by a variety of genetic, biological, environmental and psychological factors. Major depressive disorder (MDD) is typically treated with first-line antidepressant agents that primarily target monoamine neurotransmission. However, only approximately one-third of patients with MDD achieve remission following a trial with such an antidepressant. Furthermore, MDD is a heterogeneous phenotype, and new frameworks, such as the NIMH Research Domain Criteria (RDoC) may provide a more accurate, biologically based comprehension of the symptomatic heterogeneity of this devastating illness. Aids readers in understanding major depressive disorder in the context of NIMH Research Domain Criteria (RDoC) recommendations Covers a range of existing and potential pharmacologic and non-pharmacologic treatment options, from lifestyle adjustments, to antidepressants and novel therapeutics Synthesizes discussions on the cellular and molecular mechanisms underlying symptoms with the clinical aspects of depression

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An Introduction to Molecular Neurobiology - Zach W. Hall - 1992
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Neurobiology of Mental Illness - Dennis S. Charney - 2013-07-04
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mechanisms pertaining to mental illness. This book provides information from numerous levels of analysis including molecular biology and genetics, cellular physiology, neuroanatomy, neuropharmacology, epidemiology, and behavior. In doing so it translates information from the basic laboratory to the clinical laboratory and finally to clinical treatment. No other book distills the basic science and underpinnings of mental disorders and explains the clinical significance to the scope and breadth of this classic text. The result is an excellent and cutting-edge resource for psychiatric residents, psychiatric researchers and doctoral students in neurochemistry and the neurosciences.

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The approachable, comprehensive guide to neurobiology Neurobiology rolls the anatomy, physiology, and pathology of the nervous system into one

complex area of study. Neurobiology For Dummies breaks down the specifics of the topic in a fun, easy-to-understand manner. The book is perfect for students in a variety of scientific fields ranging from neuroscience and biology to pharmacology, health science, and more. With a complete overview of the molecular and cellular mechanisms of the nervous system, this complete resource makes short work of the ins and outs of neurobiology so you can understand the details quickly. Dive into this fascinating guide to an even more fascinating subject, which takes a step-by-step approach that naturally builds an understanding of how the nervous system ties into the very essence of human beings, and what that means for those working and studying in the field of neuroscience. The book includes a complete introduction to the subject of neurobiology. Gives you an overview of the human nervous system, along with a discussion of how it's similar to that of other animals Discusses various neurological disorders, such as strokes, Alzheimer's disease, Parkinson's disease, and schizophrenia Leads you through a point-by-point approach to describe the science of perception, including how we think, learn, and remember Neurobiology For Dummies is your key to mastering this complex topic, and will propel you to a greater understanding that can form the basis of your academic and career success.

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The Neurobiology of Aging and Alzheimer Disease in Down Syndrome - Elizabeth Head - 2021-08-31

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Catatonia - Stanley N. Caroff - 2007-05-03
During the 20th century, catatonia all but dropped off the agenda of mainstream psychiatric research. However, several dedicated research groups, represented in this volume, continued to report original data highlighting catatonia as a relevant and ideal subject for clinical study. This book, which exemplifies the unparalleled breadth of the knowledge gained, will benefit clinicians managing catatonic phenomena as well as researchers interested in pursuing further investigations. This book covers in great detail the psychopathology and neurobiology of catatonia, focusing on the history, epidemiology, etiology, diagnosis and treatment of the disorder. This comprehensive volume Offers a wide representation of the historical and worldwide literature on the many variants of catatonia in a single, well-organized text. Includes work presented by the original investigators, many of whom work outside the United States and have had their previous studies published only in non-English journals. Covers alternative opinions and perspectives on catatonia, contributing novel and illuminating perspectives on the syndrome. Addresses areas of controversy -- including disagreements over treatment and the nosologic status of catatonia -- head-on, in a balanced, evidence-based presentation. Balances practical clinical material with the underlying neurobiology, presenting clinical aspects in the context of history, epidemiology, cross-cultural perspectives, and neurobiological findings and highlighting the richness and intellectual attraction of the study of the disorder. Catatonia is unique in offering a diverse, international group of contributors and such a comprehensive, up-to-date review of the clinical and scientific literature, spanning the breadth of contemporary understanding about the nature, meaning, and importance of the syndrome.

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Neurobiology of the Leech - Kenneth J. Muller - 2010-07-01
In the 19th century, the medicinal applications of leeches prompted basic research into their neurobiology, reproduction, development, and anatomy; subsequently, leeches became an important model for understanding the nervous system. In this monograph, each chapter provides a narrative account of experimental work on a particular area of leech neurobiology, and explains its significance for the broader field of neuroscience. The appendices describe methods for maintaining and manipulating leeches in the laboratory and include an atlas of neurons in the leech Hirudo medicinalis. Extensively illustrated, this book is a classic in the field and is considered a "must read" for neuroscientists and those interested in leech biology. It has been out of print for many years; however, some recent inquiries have prompted us to reprint it and make it available at an affordable price.

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Fundamental Neuroscience for Basic and Clinical Applications,with STUDENT CONSULT Online Access,4 - Duane E. Haines - 2013
Turn to Fundamental Neuroscience for a thorough, clinically relevant

understanding of this complicated subject! Integrated coverage of neuroanatomy, physiology, and pharmacology, with a particular emphasis on systems neurobiology, effectively prepares you for your courses, exams, and beyond. Easily comprehend and retain complex material thanks to the expert instruction of Professor Duane Haines, recipient of the Henry Gray/Elsevier Distinguished Teacher Award from the American Association of Anatomists and the Distinguished Teacher Award from the Association of American Colleges. Access the complete contents online at www.studentconsult.com, plus 150 USMLE-style review questions, sectional images correlated with the anatomical diagrams within the text, and more. Grasp important anatomical concepts and their clinical applications thanks to correlated state-of-the-art imaging examples, anatomical diagrams, and histology photos. Retain key information and efficiently study for your exams with clinical highlights integrated and emphasized within the text.

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Neuroanatomy for Medical Students - J. L. Wilkinson - 2014-04-24
Neuroanatomy for Medical Students, Second Edition provides a fundamental knowledge base that is essential to a proper understanding of the clinical neurosciences. This edition includes additional topics on neurophysiology, neuropharmacology, and applied anatomy. The areas on cell membrane structure and function, motor control, muscle spindles, spinocerebellar tracts, reticular formation, striatal transmitters, and retinal neurons are updated. This book also expands the topics on pineal gland, pituitary tumors, split brain effect, visual cortex, neural plasticity, and barrel fields. The topography of ventricles and summary table of cranial nerve are likewise revised. Other materials covered include nerve growth factor, neural transplantation, dorsal column transection, cerebellar memory, and perivascular spaces. The neurotransmitters and neuromodulators, nuclear magnetic resonance, and position emission tomography are also discussed. This publication is a good reference for medical students intending to acquire knowledge of basic neurobiology.

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Neurobiology - Georg F. Striedter - 2015-10-02
Focusing on the problems that brains help organisms solve, Neurobiology: A Functional Approach asks not only how the nervous system works but also why it works as it does. This text introduces readers to neurobiology through an evolutionary, organismal, and experimental perspective. With a strong emphasis on neural circuits and systems, it bridges the gap between the cellular and molecular end and the cognitive end of the neuroscience spectrum, allowing students to grasp the full breadth of the subject. Neurobiology covers not only what neuroscientists have learned about the brain in terms of facts and ideas, but also how they have learned it through key experiments.

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Molecular Neurobiology - Steven Zalcman - 1994
Covers: channels; secretory vesicles and exocytosis; receptors/coupling mechanisms; synaptic plasticity; modulatory factors; and protein kinases

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Neurobiology - Gary G. Matthews - 2000-12-27
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Interpersonal Neurobiology and Clinical Practice (Norton Series on Interpersonal Neurobiology) - Daniel J. Siegel - 2021-09-14
An edited collection from some of the most influential writers in mental health. Books in the Norton Series on Interpersonal Neurobiology have collectively sold close to 1 million copies and contributed to a revolution in cutting-edge mental health care. An interpersonal neurobiology of human development enables us to understand that the structure and function of the mind and brain are shaped by experiences, especially those involving emotional relationships. Here, the three series editors have enlisted some of the most widely read IPNB authors to reflect on the impact of IPNB on their clinical practice and offer words of wisdom to the hundreds of thousands of IPNB-informed clinicians around the world. Topics include: Dan Hill on dysregulation and impaired states of consciousness; Deb Dana on the polyvagal perspective; Bonnie Badenoch on therapeutic presence; Kathy Steele on motivational systems in complex trauma.

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The Oxford Handbook of Invertebrate Neurobiology - John H. Byrne - 2019-01-29
Invertebrates have proven to be extremely useful model systems for gaining insights into the neural and molecular mechanisms of sensory processing, motor control and higher functions such as feeding behavior, learning and memory, navigation, and social behavior. A major factor in their enormous contributions to neuroscience is the relative simplicity of invertebrate nervous systems. In addition, some invertebrates, primarily the molluscs, have large cells, which allow analyses to take place at the level of

individually identified neurons. Individual neurons can be surgically removed and assayed for expression of membrane channels, levels of second messengers, protein phosphorylation, and RNA and protein synthesis. Moreover, peptides and nucleotides can be injected into individual neurons. Other invertebrate model systems such as Drosophila and Caenorhabditis elegans offer tremendous advantages for obtaining insights into the neuronal bases of behavior through the application of genetic approaches. The Oxford Handbook of Invertebrate Neurobiology reviews the many neurobiological principles that have emerged from invertebrate analyses, such as motor pattern generation, mechanisms of synaptic transmission, and learning and memory. It also covers general features of the neurobiology of invertebrate circadian rhythms, development, and regeneration and reproduction. Some neurobiological phenomena are species-specific and diverse, especially in the domain of the neuronal control of locomotion and camouflage. Thus, separate chapters are provided on the control of swimming in annelids, crustaea and molluscs, locomotion in hexapods, and camouflage in cephalopods. Unique features of the handbook include chapters that review social behavior and intentionality in invertebrates. A chapter is devoted to summarizing past contributions of invertebrates to the understanding of nervous systems and identifying areas for future studies that will continue to advance that understanding.

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The Neurobiology of Cognition and Behavior - John Hart, Jr. - 2015-11-27

"Neurobiology of Cognition and Behavior" is one of the initial textbooks of brain mapping in the field of cognitive neuroscience. This well-researched text by a leading expert in the field provides a foundational map of the human brain for cognition and behavior. This comprehensive map of essential human thinking and emotion is based on the explosion in the field of functional neuroimaging studies (fMRI, PET) in the normally functioning human brain. The approach of this text is to confirm the association of these brain regions by verifying that damage to the activated brain area results in a consistent deficit in the cognitive/behavioral operation under investigation. The approach used to form this view of mapping brain and cognition is based on cognitive neuroscience principles of defining dissociable, fine-grained cognitive units and associating these units with brain regions encoding for these units or aspects of the units from both functional imaging and lesion studies. These cognitive-brain relationships are incorporated into clinical syndromes to account for the behavior of these patients after a lesion occurs, with the added feature of presenting patient videos demonstrating the disrupted cognitive behaviors. This comprehensive textbook provides a framework of the basic architecture of cognition in the brain with this combination of activation and lesion study

confirmation of the brain-behavior associations. This basic framework is useful for those students studying the interaction of cognitive science and neuroanatomy as well as being relevant to the experienced neuroscientist researcher or clinician.

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Neurobiology of TRP Channels - Tamara Luti Rosenbaum Emir - 2017-08-09

During the last two decades, there has been an explosion of research pertaining to the molecular mechanisms that allow for organisms to detect different stimuli that is an essential feature for their survival. Among these mechanisms, living beings need to be able to respond to different temperatures as well as chemical and physical stimuli. Thermally activated ion channels were proposed to be present in sensory neurons in the 1980s, but it was not until 1997 that a heat- and capsaicin- activated ion channel, TRPV1, was cloned and its function described in detail. This groundbreaking discovery led to the identification and characterization of several more proteins of the family of Transient Receptor Potential (TRP) ion channels. Intensive research has provided us with the atomic structures of some of these proteins, as well as understanding of their physiological roles, both in normal and pathological conditions. With chapters contributed by renowned experts in the field, Neurobiology of TRP Channels contains a state- of- the-art overview of our knowledge of TRP channels, ranging from structure to their functions in organismal physiology. Features: • Contains chapters on the roles of several TRP ion channels with a diversity of physiological functions, providing a complete picture of the widespread importance of these proteins. • Presents an overview of the structure of TRP channels, including the roles of these proteins in different physiological processes. • Discusses the roles of TRP channels in pathophysiological processes, further highlighting their importance. • Features several full color illustrations to allow the reader better comprehension of TRP channels. A volume in the Frontiers in Neuroscience series

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Sleep-Wake Neurobiology and Pharmacology - Hans-Peter Landolt - 2019-09-03
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Neurobiology of Huntington’s Disease - Donald C. Lo - 2010-07-02
In 1993, the genetic mutation responsible for Huntington’s disease (HD) was identified. Considered a milestone in human genomics, this discovery

has led to nearly two decades of remarkable progress that has greatly increased our knowledge of HD, and documented an unexpectedly large and diverse range of biochemical and genetic perturbations that seem to result directly from the expression of the mutant huntingtin gene. Neurobiology of Huntington’s Disease: Applications to Drug Discovery presents a thorough review of the issues surrounding drug discovery and development for the treatment of this paradigmatic neurodegenerative disease. Drawing on the expertise of key researchers in the field, the book discusses the basic neurobiology of Huntington’s disease and how its monogenic nature confers enormous practical advantages for translational research, including the creation of robust experimental tools, models, and assays to facilitate discovery and validation of molecular targets and drug candidates for HD. Written to support future basic research as well as drug development efforts, this volume: Covers the latest research approaches in genetics, genomics, and proteomics, including high-throughput and high-content screening Highlights advances in the discovery and development of new drug therapies for neurodegenerative disorders Examines the practical realities of preclinical testing, clinical testing strategies, and, ultimately, clinical usage While the development of effective drug treatments for Huntington's disease continues to be tremendously challenging, a highly interactive and cooperative community of researchers and clinical investigators now brings us to the threshold of potential breakthroughs in the quest for therapeutic agents. The impressive array of drug discovery resources outlined in the text holds much promise for treating this devastating disease, providing hope to long-suffering Huntington’s disease patients and their families.

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Neurobiology of Bipolar Disorder - Joao Luciano de Quevedo - 2020-11-25
The Neurobiology of Bipolar Disorder: Road to Novel Therapeutics combines the basic neurobiology of bipolar disorder with discussions of the most recent advances in research, including the interacting pathways implicated in the pathophysiology of bipolar disorder, genetic approaches and the pharmacogenomics of bipolar disorder. The basic foundational understanding of the neurobiology underlying the disorder, along with a comprehensive summary of the most recent advances in research combine to aid advanced students and researchers in their understanding of bipolar disorder management using novel and fast-acting pharmaceutical and neuromodulatory approaches. Aids readers in understanding bipolar disorder in the context of NIMH Research Domain Criteria (RDoC) recommendations Covers a range of existing and potential pharmacologic and non-pharmacologic treatment options, from lifestyle adjustments to novel therapeutics Synthesizes a discussion of the cellular and molecular mechanisms underlying symptoms with clinical aspects of bipolar disorder

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Neurobiology of Psychiatric Disorders - Thomas E Schlaepfer - 2012-09-01
This new volume in the Handbook of Clinical Neurology presents a comprehensive review of the fundamental science and clinical treatment of psychiatric disorders. Advances in neuroscience have allowed for dramatic advances in the understanding of psychiatric disorders and treatment. Brain disorders, such as depression and schizophrenia, are the leading cause of disability worldwide. It is estimated that over 25% of the adult population in North America are diagnosed yearly with at least one mental disorder and similar results hold for Europe. Now that neurology and psychiatry agree that all mental disorders are in fact, "brain diseases," this volume provides a foundational introduction to the science defining these disorders and details best practices for psychiatric treatment. Provides a comprehensive review of the scientific foundations of psychiatric disorders and psychiatric treatment Includes detailed results from genetics, molecular biology, brain imaging, and neuropathological, immunological, epidemiological, metabolic, therapeutic and historical aspects of the major psychiatric disorders A "must have" reference and resource for neuroscientists, neurologists, psychiatrists, and clinical psychologists as well as all research scientists investigating disorders of the brain

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The Neurology of Eye Movements : Text and CD-ROM - Departments of Neurology R. John Leigh Professor, Neuroscience Otolaryngology and Biomedical Engineering Case Western Reserve University University Hospitals and Veterans Affairs Medical Center Cleveland Ohio - 1999-08-26
The Neurology of Eye Movements provides clinicians with a synthesis of current scientific information that can be applied to the diagnosis and treatment of disorders of ocular motility. Basic scientists will also benefit from descriptions of how data from anatomical, electrophysiological, pharmacological, and imaging studies can be directly applied to the study of disease. By critically reviewing such basic studies, the authors build a conceptual framework that can be applied to the interpretation of abnormal ocular motor behavior at the bedside. These syntheses are summarized in displays, new figures, schematics and tables. Early chapters discuss the visual need and neural basis for each functional class of eye movements. Two large chapters deal with the evaluation of double vision and systematically evaluate how many disorders of the central nervous system affect eye movements. This edition has been extensively rewritten, and

contains many new figures and an up-to-date section on the treatment of abnormal eye movements such as nystagmus. A major innovation has been the development of an option to read the book from a compact disc, make use of hypertext links (which bridge basic science to clinical issues), and view the major disorders of eye movements in over 60 video clips. This volume will provide pertinent, up-to-date information to neurologists, neuroscientists, ophthalmologists, visual scientists, otalaryngologists, optometrists, biomedical engineers, and psychologists.

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Handbook of the Behavioral Neurobiology of Serotonin - Christian P. Muller - 2009-12-30
Serotonin (5-hydroxytryptamine, often cited as 5-HT) is one of the major excitatory neurotransmitter, and the serotonergic system is one of the best studied and understood transmitter systems. It is crucially involved in the organization of virtually all behaviours and in the regulation of emotion and mood. Alterations in the serotonergic system, induced by e.g. learning or pathological processes, underlie behavioural plasticity and changes in mood, which can finally results in abnormal behaviour and psychiatric conditions. Not surprisingly, the serotonergic system and its functional components appear to be targets for a multitude of pharmacological treatments - examples of very successful drugs targeting the serotoninergic system include Prozac and Zoloft. The last decades of research have not only fundamentally expanded our view on serotonin but also revealed in much more detail an astonishing complexity of this system, which comprises a multitude of receptors and signalling pathways. A detailed view on its role in basal, but also complex, behaviours emerged, and, was presented in a number of single review articles. Although much is known now, the serotonergic system is still a fast growing field of research contributing to our present understanding of the brains function during normal and disturbed behaviour. This handbook aims towards a detailed and comprehensive overview over the many facets of behavioural serotonin research. As such, it will provide the most up to date and thorough reading concerning the serotonergic systems control of behaviour and mood in animals and humans. The goal is to create a systematic overview and first hand reference that can be used by students and scholars alike in the fields of genetics, anatomy, pharmacology, physiology, behavioural neuroscience, pathology, and psychiatry. The chapters in this book will be written by leading scientists in this field. Most of them have already written excellent reviews in their field of expertise. The book is divided in 4 sections. After an historical introduction, illustrating the growth of ideas about serotonin function in behaviour of the last forty years, section A will focus on the functional anatomy of the serotonergic system. Section B provides a review of the neurophysiology of the serotonergic system and its single components. In section C the involvement of serotonin in behavioural organization will be discussed in great detail, while section D deals with the role of serotonin in behavioural pathologies and psychiatric disorders. The first handbook broadly discussing the behavioral neurobiology of the serotonorgic transmitter system Co-edited by one of the pioneers and opinion leaders of the past decades, Barry Jacobs (Princeton), with an international list (10 countries) of highly regarded contributors providing

over 50 chapters, and including the leaders in the field in number of articles and citations: K. P. Lesch, T. Sharp, A. Caspi, P. Blier, G.K. Aghajanian, E. C. Azmitia, and others The only integrated and complete resource on the market containing the best information integrating international research, providing a global perspective to an international community Of great value not only for researchers and experts, but also for students and clinicians as a background reference

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Brain and Culture - Bruce E. Wexler - 2008-08-29

Research shows that between birth and early adulthood the brain requires sensory stimulation to develop physically. The nature of the stimulation shapes the connections among neurons that create the neuronal networks necessary for thought and behavior. By changing the cultural environment, each generation shapes the brains of the next. By early adulthood, the neuroplasticity of the brain is greatly reduced, and this leads to a fundamental shift in the relationship between the individual and the environment: during the first part of life, the brain and mind shape themselves to the major recurring features of their environment; by early adulthood, the individual attempts to make the environment conform to the established internal structures of the brain and mind. In Brain and Culture, Bruce Wexler explores the social implications of the close and changing neurobiological relationship between the individual and the environment, with particular attention to the difficulties individuals face in adulthood when the environment changes beyond their ability to maintain the fit between existing internal structure and external reality. These difficulties are evident in bereavement, the meeting of different cultures, the experience of immigrants (in which children of immigrant families are more

successful than their parents at the necessary internal transformations), and the phenomenon of interethnic violence. Integrating recent neurobiological research with major experimental findings in cognitive and developmental psychology—with illuminating references to psychoanalysis, literature, anthropology, history, and politics—Wexler presents a wealth of detail to support his arguments. The groundbreaking connections he makes allow for reconceptualization of the effect of cultural change on the brain and provide a new biological base from which to consider such social issues as "culture wars" and ethnic violence.

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The Neurobiology of Learning and Memory - Jerry W. Rudy - 2014
To understand how the brain learns and remembers requires an integration of psychological concepts and behavioral methods with mechanisms of synaptic plasticity and systems neuroscience. The Neurobiology of Learning and Memory, Second Edition provides a synthesis of this interdisciplinary field. Each chapter makes the key concepts transparent and accessible to a reader with minimal background in either neurobiology or psychology and is extensively illustrated with full-color photographs and figures depicting important concepts and experimental data. Like the First Edition, the Second Edition is organized into three parts. However, each part has been expanded to include new chapters or reorganized to incorporate new findings and concepts. Part One introduces the idea that synapses modified by experience provide the basis for memory storage. It next describes the long- term potentiation methodology used to study how synapses are modified and concepts needed to understand the organization of synapses. The remaining chapters are organized around the idea that the synaptic changes that support long-term potentiation evolve in four overlapping stages referred to as (a) generation, (b) stabilization, (c) consolidation, and (d) maintenance. The goal of each chapter is to reveal that each stage depends on unique molecular processes and to describe what they are. Part Two builds on this foundation to show how molecules and cellular processes that have been identified from studies of synaptic plasticity also participate in the making of memories. It discusses some of the basic conceptual issues researchers face in trying to relate memory to synaptic molecules and describes some of the behavioral and neurobiological methods that are used. The chapters describing the processes involved in memory formation and consolidation have been extensively modified to provide a more detailed account of the molecular events that are engaged to ensure that establ

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