The Mammalian Auditory Pathway Neuroanatomy Author Douglas B Webster Published On July 1992

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Medical Neuroscience

A regional and functional approach to learning human neuroanatomy – enhanced by additional full-color illustrations and PowerPoint® slides of all images in the text for instructors! Neuroanatomy: Text and Atlas covers neuroanatomy from both a functional and regional perspective to provide an understanding of how the components of the central nervous system work together to sense the world around us, regulate body systems, and produce behavior. This trusted text thoroughly covers the sensory, motor, and integrative skills of the brains and presents an overview of the function in relation to structure and the locations of the major pathways and neuronal integrative regions. Neuroanatomy: Text and Atlas also teaches readers how to interpret the new wealth of human brain images by developing an understanding of the anatomical localization of brain function. The authoritative core content of myelin-stained histological sections is enhanced by informative line illustrations, angiography, and brain views produced by MRI, and other imaging technologies. • Revised and updated to reflect advances in clinical neuroanatomy and neural science • Full-color illustrations enrich the text, including many new to this edition • Chapters begin with a clinical case to illustrate the connections and functions of the key material • Chapters end with a series of multiple-choice review questions • NEW Online learning center will display brain views produced by MRI and PET • Increases knowledge of the regional and functional organization of the spinal cord and brain, one system at a time • Provides thorough coverage of the sensory, motor, and integrative systems of the brain, together

with cerebral vasculature • Promotes understanding of the complex details of neuroanatomy needed for accurate interpretation of radiological image • Comprehensive atlas provides key views of the surface anatomy of the central nervous systems and photographs of myelin-stained sections in three anatomical planes • Includes learning aids such as clinical topics, boxes, chapter summaries, and a Glossary of key terms and structures

Epilepsy and the Corpus Callosum 2

New editionâ€”revised and updated throughout. Clarifies and expands discussions from first edition. Includes two new chapters, additional information on the entire diencephalon, as well as 14 new illustrations. Provides clear description of structural and functional organization of the complete nervous system. Presents detailed descriptions of the structures and functions of the vestibular system, speech perception, language, and speech production.TEXTBOOK

Integrative Functions in the Mammalian Auditory Pathway

Since the last symposium on "Neuronal Mechanisms of Hearing" held in Prague in 1980 and published in the volume of the same name (J. Syka and L. Aitkin, Eds. , Plenum Press, 1981), remarkable progress has been achieved in the understanding of the auditory system. A variety of new ideas and new methods have emerged. This progress can be easily documented by comparing the volume based on the 1980 Symposium with the program for the 1987 Symposium. For example, there were 45 contributions to auditory physiology in each symposium but there were 27 contributions focusing on anatomy in 1987 as compared to 7 in 1980, and perhaps most telling, there were 12 contributions to the neurochemistry of the system in 1987 while there were only 3 in 1980. In terms of percentages of contributions, neuroanatomy rose from 13% to 32% and neurochemistry (or chemical anatomy) rose from 5% in 1980 to 14% in 1987. These increases in the numbers and proportions of anatomical and neurochemical contributions undoubtedly reflects the increasing availabil ity and rising expertise in the new neuroanatomica1 and biochemical techniques most notably, tract-tracing by exploitation of axonal transport or by intracellular micro-injection methods, and neurotransmitter identifi cation by use of immunocytochemistry or receptor-binding techniques. New ideas have emerged on the function of cochlear hair cells particularly in connection with olivococh1ear bundle stimulation and supported by findings of contractile proteins in outer hair cells.

Audiology

Connecting the auditory brain stem to sensory, motor, and limbic systems, the inferior colliculus is a critical midbrain station for auditory processing. Winer and Schreiner's The Inferior Colliculus, a critical, comprehensive reference, presents the current knowledge of the inferior colliculus from a variety of perspectives, including anatomical, physiological,

developmental, neurochemical, biophysical, neuroethological and clinical vantage points. Written by leading researchers in the field, the book is an ideal introduction to the inferior colliculus and central auditory processing for clinicians, otolaryngologists, graduate and postgraduate research workers in the auditory and other sensory-motor systems.

Evolution of Nervous Systems: Non-mammalian vertebrates

The Springer Handbook of Auditory Research presents a series of com prehensive and synthetic reviews of the fundamental topics in modern auditory research. It is aimed at all individuals with interests in hearing research including advanced graduate students, postdoctoral researchers, and clinical investigators. The volumes will introduce new investigators to important aspects of hearing science and will help established inves tigators to better understand the fundamental theories and data in fields of hearing that they may not normally follow closely. Each volume is intended to present a particular topic comprehensively, and each chapter will serve as a synthetic overview and guide to the literature. As such, the chapters present neither exhaustive data reviews nor original research that has not yet appeared in peer-reviewed journals. The series focusses on topics that have developed a solid data and con ceptual foundation rather than on those for which a literature is only beginning to develop. New research areas will be covered on a timely basis in the series as they begin to mature.

Reasoning and Cognition

A summary of how the electrical signals used to represent sounds are encoded and interpreted through the integrated roles of various nuclei. This volume builds on the information about the anatomy and physiology of the auditory pathway found in volumes 1 and 2 of the SHAR series. While the first two volumes describe the structure and function of auditory pathways, this one explains how these pathways lead to an animal's ability to localize and interpret sounds.

The Central Auditory System

Written by foremost authorities in the field, Audiology: Diagnosis presents the basic concepts and essential clinical information for diagnosing auditory disorders, otologic diseases, and vestibular dysfunction. The book provides a thorough review of fundamental principles of diagnosis, including the basic procedures, the anatomy and physiology of the auditory system, imaging techniques, instrumentation, calibration, and more. It also covers the clinical tests essential for assessing the type and degree of hearing loss and for determining the etiological factors underlying the patient's disorder. Chapters address such important topics as ototoxicity and pharmacology in the audiology practice, and utilizing functional brain imaging and radiologic techniques.Highlights: New information on effective methods for neonatal hearing screening,

assessment of vestibular disorders, the genetics of hearing loss, and recent advances in testing for auditory processing disorders in children and adults Chapter outlines to rapidly acquaint reader with topics to be discussed Pearls, pitfalls, controversial points, and special considerations providing recommendations and comments on key aspects of patient care Audiology: Diagnosis is one part of a three-volume series, which is completed by Audiology: Treatment and Audiology: Practice Management. Together these books provide audiologists and students in graduate programs with an invaluable resource for each stage of management.

Comparative Vertebrate Neuroanatomy

Some of the most creative scientists investigating directional hearing have contributed to this volume, providing a current and comprehensive overview of their work, their research problems, and the strategies they have used to solve them. They discuss many aspects of directional hearing from neuropsychological mechanisms underlying sound localization, through the variety of ways animals locate sound in space, to normal and pathological directional hearing in humans. This is a valuable source book for hearing scientists and clinicians, as well as for scientists without specialized background in spatial hearing, including psychologists, engineers, and biologists.

Auditory Worlds: Sensory Analysis and Perception in Animals and Man

The Springer Handbook of Auditory Research presents a series of comprehen sive and synthetic reviews of the fundamental topics in modern auditory research. The volumes are aimed at all individuals with interests in hearing research including advanced graduate students, postdoctoral researchers, and clinical investigators. The volumes are intended to introduce new investi gators to important aspects of hearing science and to help established inves tigators to better understand the fundamental theories and data in fields of hearing that they may not normally follow closely. Each volume is intended to present a particular topic comprehensively, and each chapter will serve as a synthetic overview and guide to the lit erature. As such, the chapters present neither exhaustive data reviews nor original research that has not yet appeared in peer-reviewed journals. The volumes focus on topics that have developed a solid data and conceptual foundation rather than on those for which a literature is only beginning to develop. New research areas will be covered on a timely basis in the series as they begin to mature. Each volume in the series consists of five to eight substantial chapters on a particular topic. In some cases, the topics will be ones of traditional interest for which there is a substantial body of data and theory, such as auditory neuroanatomy (Vol. 1) and neurophysiology (Vol. 2). Other volumes in the series will deal with topics which have begun to mature more recently, such as development, plasticity, and computational models of neural processing.

Encyclopedia of Acoustics

The main function of the sensory systems is the transducing of external stimuli into bioelectrical signals, which are conducted through afferent pathways from sensory epithelia to the brain. However, it is known that descending projections are ubiquitous in the different sensory modalities, and in the case of auditory efferents connect the cerebral cortex with sensory receptor cells. Several functions have been attributed to the efferent system, including protection to acoustic trauma, unmasking of auditory stimuli in background noise, balance of interaural sensitivity and some cognitive functions like modulation of cochlear sensitivity during selective attention to auditory or visual stimuli. In addition there is evidence of a possible involvement of the efferent system in the etiology or treatment of some clinical pathologies like tinnitus. In this e-book, entitled “Auditory Efferent System: New Insights from Cortex to Cochlea”, we aimed to give an overview of the advances concerning the descending projections from the auditory cortex to subcortical nuclei and the olivocochlear system. In addition, different theoretical proposals of efferent functions are presented. We think that this e-book is an important contribution to the understanding of the efferent system in mammals, merging auditory-cortex literature with studies performed in the olivocochlear system.

Neuroanatomy Text and Atlas, Fifth Edition

Cochlear Implants

Clinical Otology is the complete reference for basic scientific information on the functioning of the ear and current techniques for the diagnosis, management, and rehabilitation of patients with common otologic disorders. In this edition the authors address important topics such as the genetic diagnosis of hereditary hearing loss, management of superior canal dehiscence, evidence-based management of otitis media with effusion, middle ear and brain stem implantable hearing devices, new applications of transtympanic therapy, and more. The book features the exquisite color photographs of world-class otologic photographer Eiji Yanagisawa, MD.Highlights of the third edition: New chapters on Molecular Biology and Clinical Otology, Molecular Disorders and Clinical Otology, Pharmacology of Otologic Drugs, and Cystic Lesions of the Petrous Apex More than 400 illustrations and full-color photographs to aid the comprehension of key concepts Comprehensive lists of references for pursuing topics in greater depth All otologists, otolaryngologists, audiologists, neurologists, neurosurgeons, and students seeking to optimize patient care should add this state-of-the-art reference to their professional library.

Biology of Sensory Systems

Neuroanatomy

What auditory worlds exist? This question implies that the auditory experience of various animals is not the same. The recognition that the sense organs of animals may be quite different to those of man is crucial to understanding animal behavior and to the establishment of the science of sensory physiology. "Auditory Worlds" provides in a succinct form a report of fifteen years of research activity on the hearing system of vertebrates. Scientists from a broad range of backgrounds contributed to this collaborative research effort. They used almost every available approach to studying the ear and the "hearing brain". There were engineers with interests in measuring and defining sound and the human perception of it, and human perception of speech and music. Others trained in zoology concentrated their efforts in understanding the structure and function of hearing organs of different vertebrate groups (reptiles, birds and mammals). Some groups worked towards understanding how the brain processes auditory information that is important during sound production and vocalization in animals or the acoustic signals relevant to behavior. A comparison to perception in hearing-impaired humans was established. Concerted effort made it possible to understand the relationship between physiology on the one hand and psychoacoustics on the other in both animal and man. New methodologies, such as the measurement of otoacoustic emissions, became established during the tenure of this project and had significant influence on the kind of work carried out in later years. This book is not a sequence of individual projects' reports. The chapters do not correspond to projects, but have been jointly written by several researchers in each case. There was a strong desire to produce data of interest to the widest possible audience.

The Mouse Nervous System

The auditory system is a complex neural system composed of many types of neurons connected into networks. One feature that sets the auditory system apart from other sensory systems, such as somatosensory or visual systems, is the many stages of neural processing that occur between the ear in the periphery and the cerebral cortex. Each stage is composed of specialized types of neurons connected in specific microcircuits that perform computations on the information about sound. To understand this processing, all the tools of neuroscience must be employed. The proposed text integrates cell biology, synaptic physiology, and electrophysiology to fully develop the topic, presenting an overview of the functional anatomy of the central auditory system. It is organized based on the neuronal connectivity of the central auditory system, which emphasizes the neurons, their synaptic organization, and their formation of functional pathways and microcircuits. The goal of the book is to stimulate research into the cell biology of the central auditory system and the characteristics of the specific neurons and connections that are necessary for normal hearing. Future research on the development of the central auditory including that employing stem cells will require such information in order to engineer appropriate therapeutic approaches.

Structure of the Cat Auditory Cortex

The Springer Handbook of Auditory Research presents a series of com prehensive and synthetic reviews of the fundamental topics in modem auditory research. It is aimed at all individuals with interests in hearing research including advanced graduate students, postdoctoral researchers, and clinical investigators. The volumes will introduce new investigators to important aspects of hearing science and will help established inves tigators to better understand the fundamental theories and data in fields of hearing that they may not normally follow closely. Each volume is intended to present a particular topic comprehensively, and each chapter will serve as a synthetic overview and guide to the literature. As such, the chapters present neither exhaustive data reviews nor original research that has not yet appeared in peer-reviewed journals. The series focusses on topics that have developed a solid data and con ceptual foundation rather than on those for which a literature is only beginning to develop. New research areas will be covered on a timely basis in the series as they begin to mature.

Proceedings of the National Academy of Sciences of the United States of America

With over 400 illustrations, this thoroughly updated edition examines how parts of the nervous system work together to regulate body systems and produce behavior.

Anatomy of Dolphins

his book provides an in depth discussion on the dynamics and challenges of prosthetic hearing restoration via implantation. The text succinctly discusses the latest cochlear implant technology while effectively addressing implant results in terms of the human connection - the interface of implants with the nervous system and the impact on patient's overall life. Also included in an easy to understand format are graphics for illustrating concepts such as synaptic function, neurological sequelae of deafness, language learning, speech processing strategies, interaction of hearing and attention, cost effectiveness analysis, and also hierarchical rehabilitation strategies as well as sidebars for addressing related topics of interest and controversial ideas

The Cumulative Book Index

"The most comprehensive approach to neuroanatomy from both a functional and regional perspective NEW full-color images! Neuroanatomy Text and Atlas explores how parts of the nervous system work together to regulate body systems and produce behavior. The book thoroughly covers the sensory, motor and integrative systems of the brain and presents an

overview of the function in relation to structure and the locations of major pathways and neuronal integrative regions. Features NEW full-color images NEW a case study or a clinical description question has been added to each chapter NEW online learning center includes images of surface anatomy of the central nervous system and case studies A comprehensive text and atlas: Introduction to the Central Nervous System; Structural and Functional Organization of the Central Nervous System; Vasculature of the Central Nervous System and Cerebrospinal Fluid; Spinal Mechanosensory System; Pain, Temperature, and Itch; Cranial Nerves and the Trigeminal and Viscerosensory Systems; The Visual System; The Auditory System; Chemical Senses: Taste and Smell; Descending Motor Pathways and the Motor Functions of the Spinal Cord; Cranial Nerve Motor Nuclei and Brain Stem Motor Functions; The Vestibular and Oculomotor Systems; The Cerebellum; 14. The Basal Ganglia The Hypothalamus and Regulation of Endocrine and Visceral Functions; The Limbic System and Cerebral Circuitry for Emotions, Learning, and Memory"--Provided by publisher.

Neuroanatomy Text and Atlas, Fourth Edition

In August of 1991, a second Dartmouth International Workshop on the corpus callosum was convened to share and discuss the progress that had been made over the decade that had passed following the first workshop. A nucleus of basic and clinical scientists came together to discuss their work and the work of others in a field that has been broadened clinically by the addition of many new centers throughout the world that are now performing corpus callosotomy for intractable epilepsy. This text was stimulated by the participants' presentations and associated fertile discussions. It is compiled from the conference and subsequent studies. It reflects, both at the basic and clinical level, an important and expanding field of neural science endeavor. In keeping with the present and rapidly expanding field of outcomes assessment, callosotomy is again evaluated in light of a further decade of surgery and follow-up. Callosotomy continues to be a useful, palliative procedure and the indications for its use have been better established. The basic science section is a supplement to the first edition and elaborates progress in both new data and ideas. The section on experimental epilepsy models adds further support to the clinical rationale for callosotomy. Perhaps of greater importance is the contribution of experimental models to our understanding of the propagation of seizure activity. The section on the neuropsychology of the split brain patient demonstrates the continuing major contributions to the understanding of brain and behavior that pour forth from this cornucopia.

Bioacoustics

Since publication of the first edition, huge developments have taken place in sensory biology research and new insights have been provided in particular by molecular biology. These show the similarities in the molecular architecture and in the physiology of sensory cells across species and across sensory modality and often indicate a common ancestry dating back

over half a billion years. Biology of Sensory Systems has thus been completely revised and takes a molecular, evolutionary and comparative approach, providing an overview of sensory systems in vertebrates, invertebrates and prokaryotes, with a strong focus on human senses. Written by a renowned author with extensive teaching experience, the book covers, in six parts, the general features of sensory systems, the mechanosenses, the chemosenses, the senses which detect electromagnetic radiation, other sensory systems including pain, thermosensitivity and some of the minority senses and, finally, provides an outline and discussion of philosophical implications. New in this edition: Greater emphasis on molecular biology and intracellular mechanisms New chapter on genomics and sensory systems Sections on TRP channels, synaptic transmission, evolution of nervous systems, arachnid mechanosensitive sensilla and photoreceptors, electroreception in the Monotremata, language and the FOXP2 gene, mirror neurons and the molecular biology of pain Updated passages on human olfaction and gustation. Over four hundred illustrations, boxes containing supplementary material and self-assessment questions and a full bibliography at the end of each part make Biology of Sensory Systems essential reading for undergraduate students of biology, zoology, animal physiology, neuroscience, anatomy and physiological psychology. The book is also suitable for postgraduate students in more specialised courses such as vision sciences, optometry, neurophysiology, neuropathology, developmental biology. Praise from the reviews of the first edition: "An excellent advanced undergraduate/postgraduate textbook." ASLIB BOOK GUIDE "The emphasis on comparative biology and evolution is one of the distinguishing features of this self-contained book. . this is an informative and thought-provoking text" TIMES HIGHER EDUCATIONAL SUPPLEMENT

The Journal of Neuroscience

Auditory Pathway

This is a graduate-level text on the neurobiology of hearing. The structure and function of the central auditory pathway at all levels are covered in depth.

Development of the Auditory System

Comparative Hearing: Mammals

Praise for the previous edition: This text represents an excellent summary of the current state of knowledge in otology. This text is strongly recommended as a primer in otology for residents. Practicing otolaryngologists and otologists will find it a

useful review. The text's up-to-date contributions and references offer an excellent resource even for the experienced otologist. Otology and Neurotology Clinical Otology, Fourth Edition, is a detailed, contemporary review of diagnostic and therapeutic options for patients with otologic and related disorders. It addresses basic science, the clinical application of therapeutics in otology, and current research, and is designed to help physicians make the best decisions in managing the care of their patients. Key Features: New chapters on molecular genetic diagnostics, contemporary management of external and internal hearing devices, and vestibular and audiologic neuro diagnostics More than 150 high-quality, color illustrations clarify key concepts presented in the text Covers the current clinical application of genetics and contemporary testing for hearing loss All otolaryngologists -- head and neck surgeons, audiologists, neurologists, neurosurgeons, and residents seeking to optimize patient care should have this up-to-date reference in their medical library.

The Inferior Colliculus

The Mammalian Auditory Pathway: Neuroanatomy

Audiologie

Taken as a whole, this series covers all major fields of application for commercial sensors, as well as their manufacturing techniques and major types. As such the series does not treat bulk sensors, but rather places strong emphasis on microsensors, microsystems and integrated electronic sensor packages. Each of the individual volumes is tailored to the needs and queries of readers from the relevant branch of industry. A review of applications for point-of-care diagnostics, their integration into portable systems and the comfortable, easy-to-use sensors that allow patients to monitor themselves at home. The book covers such advanced topics as minimal invasive surgery, implantable sensors and prostheses, as well as biocompatible sensing.

Clinical Otology

AUDIOLOGY Diagnosis

From well-known author, Frank Musiek, comes a new text designed to aid audiology students through the clinical portion of their experience. The Auditory System: Anatomy, Physiology, and Clinical Correlates takes an easy-to-understand approach

to anatomy and physiology of the auditory system. Balanced coverage of peripheral and central auditory systems increase the readers' appreciation of the entire auditory system. Chapter 1 provides a quick reference and overview to the entire text. Integrated clinical correlates for anatomical and physiological information provide clinical relevance. Generous use of review articles and secondary sources enhances general understanding of the subject and a balanced mixture of anatomical sketches and photographs facilitates learning.

The Auditory System

The contributors to this volume have provided a detailed and integrated introduction to the behavioural, anatomical, and physiological changes that occur in the auditory system of developing animals. Edwin W Rubel is Virginia Merrill Bloedel Professor of Hearing Sciences at the Virginia Merrill Bloedel Hearing Research Center at the University of Washington, Arthur N. Popper is Professor and Chair of the Department of Zoology at the University of Maryland, while Richard R. Fay is Associate Director of the Parmly Hearing Institute and Professor of Psychology at Loyola University of Chicago. Each volume in this series is independent and authoritative; taken as a set, the series will be the definitive resource in the field.

Neuroscience of Communication

Comparative Vertebrate Neuroanatomy Evolution and Adaptation Second Edition Ann B. Butler and William Hodos The Second Edition of this landmark text presents a broad survey ofcomparative vertebrate neuroanatomy at the introductory level,representing a unique contribution to the field of evolutionaryneurobiology. It has been extensively revised and updated, withsubstantially improved figures and diagrams that are usedgenerously throughout the text. Through analysis of the variationin brain structure and function between major groups ofvertebrates, readers can gain insight into the evolutionary historyof the nervous system. The text is divided into threesections: * Introduction to evolution and variation, including a survey ofcell structure, embryological development, and anatomicalorganization of the central nervous system; phylogeny and diversityof brain structures; and an overview of various theories of brainevolution * Systematic, comprehensive survey of comparative neuroanatomyacross all major groups of vertebrates * Overview of vertebrate brain evolution, which integrates thecomplete text, highlights diversity and common themes, broadensperspective by a comparison with brain structure and evolution ofinvertebrate brains, and considers recent data and theories of theevolutionary origin of the brain in the earliest vertebrates,including a recently proposed model of the origin of the brain inthe earliest vertebrates that has received strong support fromnewly discovered fossil evidence Ample material drawn from the latest research has been integratedinto the text and highlighted in special feature boxes, includingrecent views on homology, cranial nerve organization and evolution,the relatively large and elaborate brains of birds in correlationwith their complex cognitive abilities, and the current debate onforebrain evolution across reptiles, birds, and mammals. Comparative

Vertebrate Neuroanatomy is geared to upper-levelundergraduate and graduate students in neuroanatomy, but anyoneinterested in the anatomy of the nervous system and how itcorresponds to the way that animals function in the world will findthis text fascinating.

The Mammalian Auditory Pathways

A world list of books in the English language.

Anatomy and Physiology of Hearing for Audiologists

Journal of auditory communication.

Directional Hearing

This text will provide a strong scientific foundation for the anatomy and physiology of hearing for students of audiology. Anatomy and Physiology of Hearing for Audiologists is written with the ideal balance between depth of coverage and understandability for the student without a science background.

Auditory neuroanatomy: A sound foundation for sound processing

IMS: Medical Neuroscience is designed for 1st- and 2nd-year medical students to be an introduction to neuroscience as it relates to clinical medicine. Although the nervous system can be thoroughly described by listing its cellular components and anatomical connections, a clinical appreciation of neuroscience requires a more integrative approach. In IMS: Medical Neuroscience, the clinical relevance of anatomical features are interwoven throughout the text by incorporating discussions of neurological diseases, syndromes, and clinical signs of neural trauma in the context of specific attributes of nervous system organization. By linking the anatomy to its clinical importance, students take a richer understanding of the nervous system with them as they begin their clinical training.

Sensors Applications, Sensors in Medicine and Health Care

V.1 General linear acoustics - nonlinear acoustics and cavitation - Aeroacoustics and atmospheric sound - underwater sound -- V.2 Ultrasonics, quantum acoustics and physical effects of sound, mechanical vibrations and shock, statistical methods in acoustics, noise: its effect and control -- V.3 Arcitectural acoustics, acoustical signal processing, physiological acoustics,

psychological acoustics -- V.4 Speech communications, Music and musical acoustics, bioacoustics, animal bioacoustics, Acoustical measurements and instrumentation, transducers, Index.

The Mammalian Auditory Pathway: Neurophysiology

The Anatomy of Dolphins: Insights into Body Structure and Function is a precise, detailed, fully illustrated, descriptive, and functionally oriented text on the anatomy and morphology of dolphins. It focuses on a number of delphinid species, with keynotes on important dolphin-like genera, such as the harbor porpoise. It also serves as a useful complement for expanding trends and emphases in molecular biology and genetics. The authors share their life-long expertise on marine mammals in various disciplines. Written as a team rather than being prepared as a collection of separate contributions, the result is a uniform and comprehensive style, giving each of the different topics appropriate space. Many color figures, which use the authors' access to wide collections of unique dolphin and whale material, round out this exceptional offering to the field. Includes high-quality illustrations, drawings, halftone artwork, photographic documentations, microphotos, and tables detailing dolphin anatomy, function, and morphology Facilitates education and training of students of all basic research and applied sciences dedicated to marine biology and the medical care of marine mammals Brings together the current knowledge and information on this topic, including those in obscure past or non-English publications, or scattered in short chapters in volumes Covers a number of delphinid species and serves as a useful complement for expanding trends in molecular biology and genetics

Auditory Efferent System: New Insights from Cortex to Cochlea

The Mouse Nervous System provides a comprehensive account of the central nervous system of the mouse. The book is aimed at molecular biologists who need a book that introduces them to the anatomy of the mouse brain and spinal cord, but also takes them into the relevant details of development and organization of the area they have chosen to study. The Mouse Nervous System offers a wealth of new information for experienced anatomists who work on mice. The book serves as a valuable resource for researchers and graduate students in neuroscience. * Visualization of brain white matter anatomy via 3D diffusion tensor imaging contrasts enhances relationship of anatomy to function * Systematic consideration of the anatomy and connections of all regions of brain and spinal cord by the authors of the most cited rodent brain atlases * A major section (12 chapters) on functional systems related to motor control, sensation, and behavioral and emotional states, * Full segmentation of 170120+ brain regions more clearly defines structure boundaries than previous point-and-annotate anatomical labeling, and connectivity is mapped in a way not provided by traditional atlasesA detailed analysis of gene expression during development of the forebrain by Luis Puelles, the leading researcher in this area. * Full coverage of the role of gene expression during development, and the new field of genetic neuroantomy using site-specific recombinases

* Examples of the use of mouse models in the study of neurological illness

Clinical Otology

In the last two decades, the ever increasing pace of auditory research has generated an undreamed of knowledge about the molecular and cellular bases of hearing, the physiopathology of hearing loss, the activity of the brain evoked by sounds, and the possibilities of imaginative strategies to restore hearing. The aim of this Research Topic is to contribute to the development of auditory neuroscience by placing in an up-to-date morphological context some of the latest developments in the field. This Research Topic for Frontiers in Neuroanatomy will consist of peer-reviewed articles dealing with the development, evolution, function and plasticity of the auditory system through a broad range of anatomical approaches. Articles combining neuroanatomy with other disciplines, such as molecular biology, genetics, physiology, pharmacology, behavior, neuroimaging, clinical medicine or bioinformatics, will be considered for publication insofar as they contribute to the understanding of the structure of the auditory regions of the central nervous system. The authors of the papers published in this Research Topic will be invited to present and discuss their results during a symposium organized by the Instituto de Neurociencias of Castilla y León (INCyL), to be held in Salamanca, Spain, in 2010.