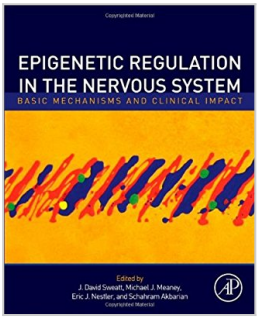

Epigenetic Regulation in the Nervous System: Basic Mechanisms and Clinical Impact

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Epigenetic Regulation in the Nervous System addresses current understanding of the roles of epigenetic processes at the molecular/cellular level, their impact on neural development and behavior, and the potential roles of these mechanisms in neurological and psychiatric disorders. This award-winning volume spans molecular epigenetics, development, cellular physiology and biochemistry, synaptic and neural plasticity, and behavioral models, and is unique in covering epigenetically based disorders of the central nervous system.

Behavioral epigenetics is the study of how environmental factors alter behavior, addressing the fundamental mechanisms that shape development and individual vulnerability/resilience to adverse behavioral outcomes. By understanding the molecular mechanisms involved in epigenetic modulation, researchers may be able to develop targeted therapies for those individuals in whom it malfunctions.

Edited by the most highly regarded leaders in the field, this book offers a comprehensive review of behavioral epigenetics and a balanced treatment of the strengths and weaknesses in experimentation in this area. Covering background material as well as topics of current interest, it serves both as a cutting-edge resource and a foundational reference. The book will benefit neuroscience researchers and graduate students with an interest in the links between gene regulation and behavior, as will clinicians dealing with disorders such as addiction, depression, and schizophrenia.

- BMA Medical Book Awards 2014 - Highly Commended, Neurology, British Medical Association
- BMA Medical Book Awards 2014 - First Prize, Neurology, British Medical Association
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- Presents a unified view of epigenetic mechanisms from behavior to genes and everything in between

- Discusses clinically relevant disorders in the context of epigenetics research, making the volume appealing to clinicians as well as basic scientists
- Provides numerous practical examples for the new investigator to facilitate implementation of research in neuroepigenetics

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Editorial Review

Review

"The book is primarily intended for advanced undergraduates, graduate students, active researchers and physician-scientists newly interested in the emerging field….Sweatt is also responsible for the book's extensive illustrations, which are copies of his paintings depicting the role of epigenetic processes in the brain, and relate to work under way in his lab."--**UAB News online, February 25, 2013** *"Sweatt, Meaney, Nestler, and Akbarian present the first foundational work to address molecular, cellular, behavioral, and clinical roles for epigenetic mechanisms in the nervous system…This unique book is targeted for physicians and scientists, as well as researchers and students."--**Reference & Research Book News,*** **October 2013**

About the Author
David Sweatt obtained his B.S. in Chemistry from the University of South Alabama before attending Vanderbilt University, where he was awarded a Ph.D. for studies of intracellular signaling mechanisms. He then did a post-doctoral Fellowship at the Columbia University Center for Neurobiology and Behavior, working on memory mechanisms in the laboratory of Nobel laureate Eric Kandel. From 1989 to 2006 he was a member of the Neuroscience faculty at Baylor College of Medicine in Houston, Texas, rising through the ranks there to Professor and Director of the Neuroscience Ph.D. program. Dr. Sweatt's laboratory studies biochemical mechanisms of learning and memory. In addition, his research program also investigates mechanisms of learning and memory disorders, such as mental retardation and aging-related memory dysfunction. He is currently the Evelyn F. McKnight endowed Chairman of the Department of Neurobiology at UAB Medical School, and the Director of the Evelyn F. McKnight Brain Institute at the University of Alabama in Birmingham. He also is a Professor the Departments of Cell Biology, Genetics, and Psychology at UAB. Dr. Sweatt has won numerous awards and honors, including an Ellison Medical Foundation Senior Scholar Award, and election as a Fellow of the American Association for the Advancement of Science. This year he won (along with Michael Meaney and Catherine Dulac) the Ipsen Foundation International Prize in Neural Plasticity, one of the most prestigious awards in his scientific field. From 1998 until 2002 he attended drawing and painting classes at the Glassell School of Art of the Museum of Fine Arts, Houston. As an artist he explores the use of painting as a medium for expressing topics of interest in contemporary biomedical research. In 2009 he published a textbook, Mechanisms of Memory, which is illustrated with original paintings and describes current models for the molecular and cellular basis of memory formation.

Michael J Meaney is a James McGill Professor of Medicine at Douglas Mental health University Institute of McGill University. He is the Director of the Maternal Adversity, Vulnerability and Neurodevelopment Project and of the Developmental Neuroendocrinology Laboratory of McGill University. Meaney was educated at Loyola College of Montreal and received his PhD from Concordia University (Montreal) with post-doctoral training at The Rockefeller University in New York. Meaney's primary research interest is that of the stable effects of early experience on gene expression and development. Meaney's research is multidisciplinary and includes studies of behaviour and physiology, to molecular biology and genetics. The primary objective of these studies is to define the processes that govern gene - environment interactions. He has authored over 270 journal articles and has been the recipient of a Scientist Award from the Canadian Institutes for Health Research (CIHR) and a Distinguished Scientist Award from the National Alliance for Research in Schizophrenia and Affective Disorders. He was awarded Lougheed Prize (Alberta Heritage foundation for Medical Research), The Klerman Award (Cornell University), The Patricia Barchas Award

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Dr. Nestler is the Nash Family Professor of Neuroscience at the Mount Sinai School of Medicine in New York, where he serves as Chair of the Department of Neuroscience and Director of the Friedman Brain Institute. He received his B.A., Ph.D., and M.D. degrees, and psychiatry residency training, from Yale University. He served on the Yale faculty from 1987-2000, where he was the Elizabeth Mears and House Jameson Professor of Psychiatry and Neurobiology, and Director of the Division of Molecular Psychiatry. He moved to Dallas in 2000 where he served as the Lou and Ellen McGinley Distinguished Professor and Chair of the Department of Psychiatry at The University of Texas Southwestern Medical Center until moving to New York in 2008. Dr. Nestler is a member of the Institute of Medicine and a Fellow of the American Academy of Arts and Sciences. The goal of Dr. Nestler's research is to better understand the molecular mechanisms of addiction and depression based on work in animal models, and to use this information to develop improved treatments of these disorders.

Schahram Akbarian studied medicine at the Freie Universitaet Berlin, Germany. He is a board certified psychiatrist and molecular neuroscientist who trained at the Massachusetts General Hospital in Boston, the Whitehead Institute for Biomedical Research in Cambridge and the University of California at Irvine. In 2002, he joined the University of Massachusetts Medical School in Worcester where he established a research program in psychiatric epigenetics and served as the Director of the Brudnick Neuropsychiatric Research Institute. Presently, he heads the Division of Psychiatric Epigenomics in the Departments of Psychiatry and Neuroscience at Mount Sinai School of Medicine. He is a former recipient of the Klerman award from the Brain & Behavior Research Foundation, the Judith Silver Memorial award of the National Alliance for the Mentally Ill, the Outstanding resident award of the National Institute of Mental Health, and the Eva King Killam Award for Outstanding Translational Research, American College of Neuropsychopharmacology.

Dr. Akbarian has been a principal investigator on National Institutes of Health-funded research projects since 2001and published close to 100 articles in scientific journals and book chapters. He is a member of professional societies such as the American College of Neuropsychopharmacology and presently serves on the Scientific Advisory Board of the Brain & Behavior Research Foundation and on Editorial Boards of various journals in the field

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