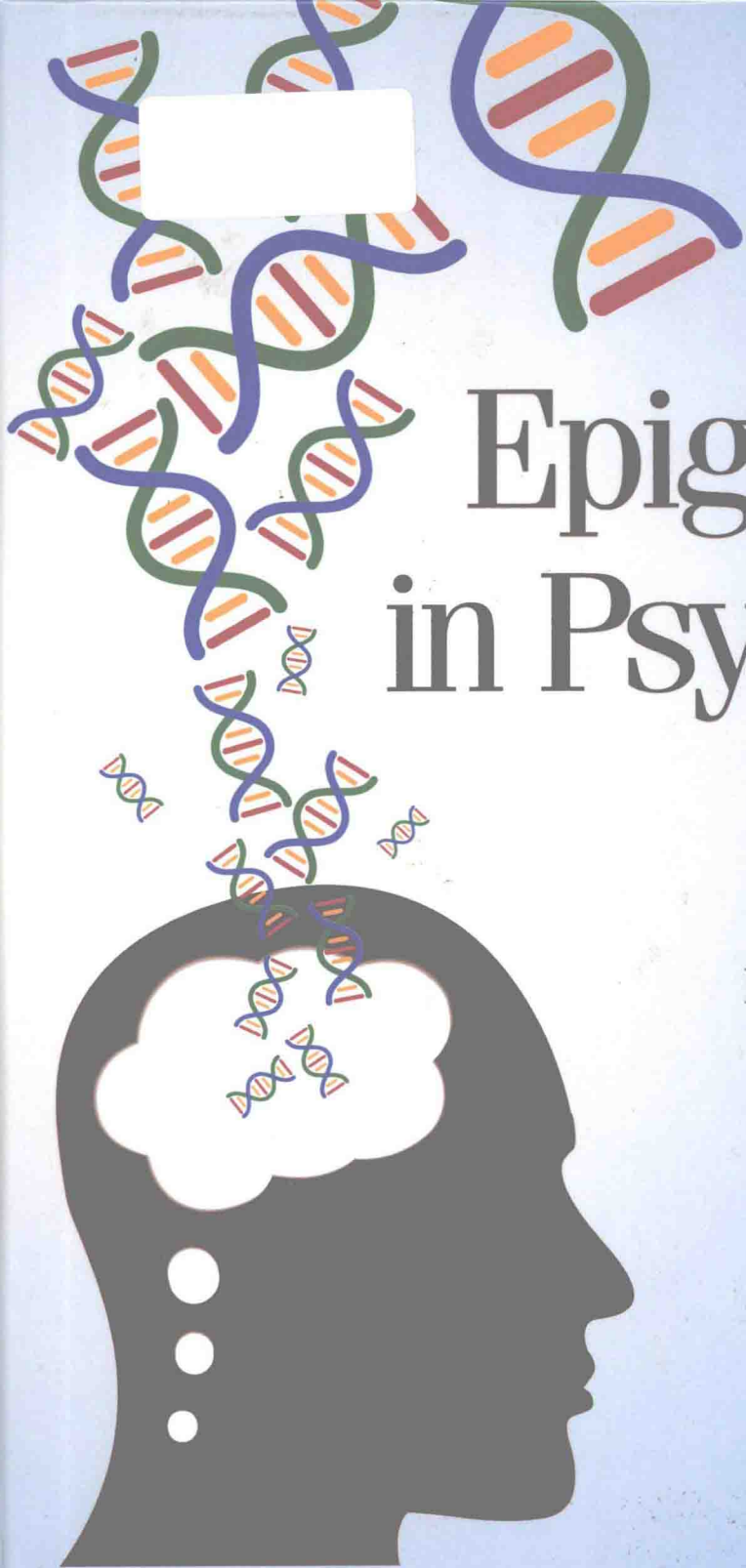

Epigenetics in Psychiatry

Edited by
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Epigenetics in Psychiatry

Preface

Epigenetics, which literally means above or in addition to genetics, is a neologism that was coined in the 1940s by the British scientist Conrad H. Waddington, combining the words epigenesis (embryonic development) and genetics. Epigenetics has been an active area of research in biomedicine for the past few decades, and in the last decade has become an active area of research in psychiatry.

This book summarizes the findings of research on epigenetics in psychiatry to date. As is evident from many of the chapters of the book, we are presently in the very early stages of this sub-speciality of psychiatry. Although epigenetics holds great promise in illuminating the causes of psychiatric disorders and improving the clinical management of patients with these disorders, there is a long way to go before epigenetics achieves these goals. We hope that this book will help move the subject of epigenetics in psychiatry forward in order for these goals to be achieved.

This book has been written by an international team of experts whom we thank for their excellent contributions. As far as was possible we tried to make sure that there was a common thread running through the book: the correlation of epigenetics in psychiatry with genetics, transcriptomics, and proteomics. The book is comprehensive in its coverage of the subject and is likely to be of interest and use to a wide readership including students and residents in psychiatry, clinical psychiatrists, laboratory researchers, and workers in the pharmaceutical industry dealing with psychotropic drugs. We would like to thank those at Elsevier for their help. In particular we wish to thank Graham Nisbet for his efforts in initiating the writing of the book and Catherine (Cassie) Van Der Laan for her efforts in bringing the book to completion.

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About the Editors

Dr Jacob Peedicayil completed his MBBS in 1984 and MD in pharmacology in 1991, both at the Christian Medical College, Vellore, India. From 1993 to 1995 he did a Post-Doctoral Fellowship at the Centre for Cellular and Molecular Biology, Hyderabad. From 1995 to 1998 he worked as a Research Fellow in the Department of Neurological Sciences, Christian Medical College, Vellore. Since 1998 he has been on the faculty of the Department of Pharmacology and Clinical Pharmacology, Christian Medical College, Vellore, becoming a professor in 2007. He does theoretical research on epigenetics, focusing on epigenetics in psychiatry. In addition, he is involved in experimental research in smooth muscle pharmacology.

Dr Dennis R. Grayson has been interested in mechanisms associated with gene expression for over 35 years. He joined the laboratory of Dr James E. Darnell at the Rockefeller University in 1984 to study cell-type specific transcription factors and their interaction with promoters and enhancers. In 1988, Dr Grayson joined the Fidia-Georgetown Institute for the Neurosciences to study gene expression programs in neurons and continued this research program at Allegheny Singer Research Institute in Pittsburgh from 1994 to 1998. He continued his interests in psychiatry and joined the Psychiatric Institute in 1998. This represented a unique opportunity to pursue the molecular underpinnings of schizophrenia. Dr Grayson has received NRSA post-doctoral support, R01 and K04 funding from the National Institutes of Health to support his work. He has published over 100 papers in peer-reviewed journals and is regularly invited to speak at numerous national and international meetings.

Dr Dimitrios Avramopoulos received his MD from the University of Athens, Greece and his PhD from the University of Crete for his work on mapping human genes on chromosome 21 and deciphering the origin of chromosomal non-disjunction in trisomy 21, mentored by Dr Stylianos Antonarakis. He undertook his post-doctoral work at Johns Hopkins University where he became a faculty member in the Department of Psychiatry in 2002. He is currently on the faculty of the Institute of Genetic Medicine and the Department of Psychiatry at Johns Hopkins University where he works on the genetics of psychiatric disorders. He is interested in the identification of disease causing variants in the genome and the mechanisms through which they affect the brain, individually or in combinations, through the disruption of functional networks and the regulation of the corresponding genes.

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