

# Contents

## Part I “Classical” Cyto- and Myeloarchitectonic Human Brain Maps

- 1 The Cytoarchitectonic Map of Korbinian Brodmann: Arealisation and Circuit Specialisation . . . . .** 3  
Guy N. Elston and Laurence J. Garey
- 2 The Cytoarchitectonic Map of Constantin von Economo and Georg N. Koskinas . . . . .** 33  
Lazaros C. Triarhou
- 3 The Myeloarchitectonic Studies on the Human Cerebral Cortex of the Vogt-Vogt School, and Their Significance for the Interpretation of Functional Neuroimaging Data . . . . .** 55  
Rudolf Nieuwenhuys

## Part II The Challenge of Mapping Cortical Areas Noninvasively in Living Brains

- 4 Estimating the Location of Brodmann Areas from Cortical Folding Patterns Using Histology and Ex Vivo MRI . . . . .** 129  
Bruce Fischl
- 5 Database-Driven Identification of Functional Modules in the Cerebral Cortex . . . . .** 157  
Simon B. Eickhoff and Danilo Bzdok

## Part III “In Vivo Brodmann Mapping” with High-Field Magnetic Resonance Imaging

- 6 Where Matters: New Approaches to Brain Analysis . . . . .** 179  
Robert Turner
- 7 MRI Methods for In-Vivo Cortical Parcellation . . . . .** 197  
Robert Turner

<b>8 Visualizing Myeloarchitecture In Vivo with Magnetic Resonance Imaging in Common Marmosets (<i>Callithrix jacchus</i>) . . . . .</b>	<b>221</b>
Nicholas A. Bock and Afonso C. Silva	
<b>9 High-Field Magnetic Resonance Mapping of the Border Between Primary Motor (Area 4) and Somatosensory (Area 3a) Cortex in Ex-Vivo and In-Vivo Human Brains . . . . .</b>	<b>239</b>
Stefan Geyer	
<b>Index . . . . .</b>	<b>255</b>

Microstructural Parcellation of the Human Cerebral  
Cortex

From Brodmann's Post-Mortem Map to in Vivo Mapping  
with High-Field Magnetic Resonance Imaging

Geyer, S.; Turner, R. (Eds.)

2013, VIII, 257 p. 187 illus., 39 illus. in color., Hardcover

ISBN: 978-3-642-37823-2