
Contents

Preface to the Series *v*
Preface *vii*
Acknowledgments *ix*
Contributors *xiii*

PART I ANATOMY

1 Deciphering the Adult Brain: From Neuroanatomy to Behavior 3
Liesbeth Zwarts, Jason Clements, and Patrick Callaerts
2 Genetically Encoded Markers for *Drosophila* Neuroanatomy 49
Ariane Ramaekers, Xiao-jiang Quan, and Bassem A. Hassan
3 Subcellular Resolution Imaging in Neural Circuits 61
W. Ryan Williamson, Chih-Chiang Chan, and P. Robin Hiesinger
4 In Vivo Single Cell Labeling Techniques 91
Chih-Fei Kao and Tzumin Lee
5 Neuronal Morphology in the *Drosophila* Embryo: Visualisation,
Digital Reconstruction and Quantification 107
Matthias Landgraf and Jan Felix Evers

PART II PHYSIOLOGY

6 Studying Synaptic Transmission at the *Drosophila* Neuromuscular
Junction Using Advanced FM 1-43 Technology 127
Ana Clara Fernandes, Valerie Uytterhoeven, and Patrik Verstreken
7 Optical Recording of Visually Evoked Activity in the *Drosophila* Central
Nervous System 143
Dierk F. Reiff

PART III BEHAVIOR

8 Behavioral Analysis of Navigation Behaviors in the *Drosophila* Larva 163
*Matthieu Louis, Moraea Phillips, Mariana Lopez-Matas,
and Simon Sprecher*
9 *Drosophila* as a Genetic Model to Investigate Motion Vision 201
Daryl M. Gohl, Marion A. Silies, and Thomas R. Clandinin

PART IV FUTURES

10	Using Primary Neuron Cultures of <i>Drosophila</i> to Analyze Neuronal Circuit Formation and Function	225
	<i>Andreas Prokop, Barbara Küppers-Munther, and Natalia Sánchez-Soriano</i>	
11	Molecular Profiling of Neural Stem Cells in <i>Drosophila melanogaster</i>	249
	<i>Elizabeth E. Caygill, Katrina S. Gold, and Andrea H. Brand</i>	
12	Out with the Brain: <i>Drosophila</i> Whole-Brain Explant Culture	261
	<i>Marta Koch and Bassem A. Hassan</i>	
	<i>Index</i>	269

The Making and Un-Making of Neuronal Circuits in
Drosophila

Hassan, B.A. (Ed.)

2012, XIV, 278 p. 48 illus., 39 illus. in color., Hardcover

ISBN: 978-1-61779-829-0

A product of Humana Press