
Contents

<i>Preface</i>	<i>v</i>
<i>Contributors</i>	<i>ix</i>
1 Long-Term Selection Experiments: Epistasis and the Response to Selection . . . <i>Charles Goodnight</i>	1
2 Finding the Epistasis Needles in the Genome-Wide Haystack	19
<i>Marilyn D. Ritchie</i>	
3 Biological Knowledge-Driven Analysis of Epistasis in Human GWAS with Application to Lipid Traits.	35
<i>Li Ma, Alon Keinan, and Andrew G. Clark</i>	
4 Epistasis for Quantitative Traits in <i>Drosophila</i>	47
<i>Trudy F.C. Mackay</i>	
5 Epistasis in the Risk of Human Neuropsychiatric Disease.	71
<i>Scott M. Williams</i>	
6 On the Partitioning of Genetic Variance with Epistasis	95
<i>José M. Álvarez-Castro and Arnaud Le Rouzic</i>	
7 Measuring Gene Interactions	115
<i>Thomas F. Hansen</i>	
8 Two Rules for the Detection and Quantification of Epistasis and Other Interaction Effects	145
<i>Günter P. Wagner</i>	
9 Direct Approach to Modeling Epistasis	159
<i>Rong-Cai Yang</i>	
10 Capacitating Epistasis—Detection and Role in the Genetic Architecture of Complex Traits	185
<i>Mats E. Pettersson and Örjan Carlborg</i>	
11 Compositional Epistasis: An Epidemiologic Perspective.	197
<i>Etsuji Suzuki and Tyler J. VanderWeele</i>	
12 Identification of Genome-Wide SNP–SNP and SNP–Clinical Boolean Interactions in Age-Related Macular Degeneration	217
<i>Carlos Riveros, Renato Vimieiro, Elizabeth G. Holliday, Christopher Oldmeadow, Jie Jin Wang, Paul Mitchell, John Attia, Rodney J. Scott, and Pablo A. Moscato</i>	
13 Epistasis Analysis Using Information Theory.	257
<i>Jason H. Moore and Ting Hu</i>	
14 Genome-Wide Epistasis and Pleiotropy Characterized by the Bipartite Human Phenotype Network.	269
<i>Christian Darabos and Jason H. Moore</i>	

15	Network Theory for Data-Driven Epistasis Networks	285
	<i>Caleb A. Lareau and Brett A. McKinney</i>	
16	Epistasis Analysis Using Multifactor Dimensionality Reduction	301
	<i>Jason H. Moore and Peter C. Andrews</i>	
17	Epistasis Analysis Using ReliefF	315
	<i>Jason H. Moore</i>	
18	Epistasis Analysis Using Artificial Intelligence	327
	<i>Jason H. Moore and Doug P. Hill</i>	
	<i>Index</i>	347



<http://www.springer.com/978-1-4939-2154-6>

Epistasis

Methods and Protocols

Moore, J.H.; Williams, S.M. (Eds.)

2015, X, 350 p. 61 illus., 17 illus. in color., Hardcover

ISBN: 978-1-4939-2154-6

A product of Humana Press