

# Contents

## **Part I Philosophy of Science: Formal Philosophy of Science**

<b>Evidence, Argument and Prediction</b> .....	3
Nancy Cartwright	
<b>Models, Simulations, and Analogical Inference</b> .....	19
Ilkka Niiniluoto	
<b>Intuitionistic Semantics for Fitch's Paradox</b> .....	29
Doukas Kapantaïs	
<b>Correlation and Truth</b> .....	41
Peter Brössel	
<b>The Limits of Probabilism</b> .....	55
Wolfgang Pietsch	

## **Part II Philosophy of Science: Idealization, Representation and Explanation**

<b>How Organization Explains</b> .....	69
Jaakko Kuorikoski and Petri Ylikoski	
<b>Mechanistic Explanation: Asymmetry Lost</b> .....	81
Samuel Schindler	
<b>Deflationism on Scientific Representation</b> .....	93
Chuang Liu	
<b>Idealization in Physics Modeling</b> .....	103
Demetris Portides	
<b>Explanatory Models Versus Predictive Models: Reduced Complexity Modeling in Geomorphology</b> .....	115
Alisa Bokulich	

v

### **Part III Philosophy of Science: Realism, Anti-realism and Special Science Laws**

<b>The Ultimate Argument Against Convergent Realism and Structural Realism: The Impasse Objection .....</b>	<b>131</b>
Paul Hoyningen-Huene	
<b>Doing Away with the No Miracles Argument .....</b>	<b>141</b>
Simon Fitzpatrick	
<b>Theory-Parts for Scientific Realists .....</b>	<b>153</b>
Alberto Cordero	
<b>Natural Kinds and Concept Eliminativism.....</b>	<b>167</b>
Samuli Pöyhönen	
<b>Against the Statistical Account of Special Science Laws.....</b>	<b>181</b>
Andreas Hüttemann and Alexander Reutlinger	

### **Part IV Philosophy of the Physical Sciences: Philosophy of Quantum Mechanics**

<b>How to Use Quantum Theory Locally to Explain EPR-Bell Correlations.....</b>	<b>195</b>
Richard Healey	
<b>Modal Interpretations and Consecutive Measurements .....</b>	<b>207</b>
Juan Sebastián Ardenghi, Olimpia Lombardi, and Martín Narvaja	
<b>Why I Am Not an Everettian .....</b>	<b>219</b>
Foad Dizadji-Bahmani	
<b>The Emergence of Integrability in Gauge Theories .....</b>	<b>229</b>
Nazim Bouatta and Jeremy Butterfield	

### **Part V Philosophy of the Physical Sciences: Perspectives on Spontaneous Symmetry Breaking**

<b>Model Landscapes in the Higgs Sector .....</b>	<b>241</b>
Arianna Borrelli and Michael Stöltzner	
<b>Practical Unification of Solid-State and Particle Physics in the Construction of the Higgs Mechanism .....</b>	<b>253</b>
Koray Karaca	

### **Part VI Philosophy of the Physical Sciences: Philosophy of Space and Time**

<b>A Critical Note on Time in the Multiverse .....</b>	<b>267</b>
Svend E. Rugh and Henrik Zinkernagel	

<b>A New View of “Fundamentality” for Time Asymmetries in Modern Physics</b> .....	281
Daniel Wohlfarth	
<b>Part VII Philosophy of the Physical Sciences: From Physics to Metaphysics</b>	
<b>How to Combine and Not to Combine Physics and Metaphysics</b> .....	295
Mauro Dorato	
<b>How (Not) To Be a Humean Structuralist</b> .....	307
Kerry McKenzie	
<b>Part VIII Philosophy of the Physical Sciences: Philosophy of Chemistry</b>	
<b>What Does Hydrogen Bonding Say About the Nature of the Chemical Bond?</b> .....	321
Paul Needham	
<b>The Metaphysics of Molecular Structure</b> .....	331
Robin Findlay Hendry	
<b>Part IX Philosophy of the Life Sciences</b>	
<b>Description, Explanation, and Explanatory Depth in Developmental Biology</b> .....	345
Christopher H. Pearson	
<b>Synthetic Genomics and the Causal Role of Genes: What has been Shown and Why it Matters</b> .....	357
Bettina Schmietow and Lorenzo Del Savio	
<b>Part X Philosophy of the Life Sciences: Biological Knowledge and Structural Realism</b>	
<b>Eschewing Entities: Outlining a Biology Based Form of Structural Realism</b> .....	371
Steven French	
<b>Must Structural Realism Cover the Special Sciences?</b> .....	383
Holger Lyre	
<b>Part XI Philosophy of the Cognitive Sciences</b>	
<b>Principles Versus Mechanisms in Cognitive Science</b> .....	393
Lilia Gurova	

<b>Computationalism, Connectionism, Dynamicism and Beyond: Looking for an Integrated Approach to Cognitive Science</b> .....	405
Víctor M. Verdejo	
<b>Qualia Change and Colour Science</b> .....	417
Lieven Decock and Igor Douven	
<b>Explanatory Coherence, Partial Truth and Diagnostic Validity in Psychiatry</b> .....	429
Panagiotis Oulis	
<b>Part XII Philosophy of the Social Sciences</b>	
<b>Performativity: Saving Austin from MacKenzie</b> .....	443
Uskali Mäki	
<b>Beyond Motivation and Metaphor: ‘Scientific Passions’ and Anthropomorphism</b> .....	455
Lisa M. Osbeck and Nancy J. Nersessian	
<b>A Way of Saving Normative Epistemology? Scientific Knowledge Without Standpoint Theories</b> .....	467
Maria Cristina Amoretti and Nicla Vassallo	
<b>The Democratic Control of the Scientific Control of Politics</b> .....	479
Matthew J. Brown	
<b>Harm, Reciprocity and the Moral Domain</b> .....	493
Alejandro Rosas	
<b>Index</b> .....	503