



An Introduction to Systems Biology

Leo Collins

مكتبة كلية علوم الطبيعة والحياة جامعة طبريز



CONTENTS

	<i>Preface</i>	<i>v</i>
1.	Transcription Networks Basic Concepts	1
	History.....	2
	Setting up for Transcription.....	6
	Promoter Escape.....	12
	Measuring and Detecting.....	16
	Transcription Factory.....	20
	Bacterial Transcription.....	24
	Eukaryotic Transcription.....	29
	Key Areas of Autoregulation.....	34
2.	Autoregulation	34
	Mechanisms of Autoregulation.....	37
	Cerebral Autoregulation.....	38
	Tubuloglomerular Feedback.....	40
	Renin-angiotensin System.....	44
	Local Renin-angiotensin Systems.....	49
	Standards.....	50
3.	Models in Systems Biology	50
	Cellular Model.....	53
	Protein Structure Prediction.....	56
	Feed Forward.....	64

	Neural Top-down Control of Physiology	69
	Perceptron.....	73
	Number.....	75
4.	Transcription Factor	75
	Transcriptional Regulation.....	89
	Through Transcription Factors and Enhancers.....	95
5.	Bistability and Memory	101
	Overview.....	102
	In Evolutionary Biology.....	112
	Human Population Growth.....	115
	Bistability	117
	Basal Ganglia and Motor Memory.....	126
	Damage to The Cortex	129
	Physiology	133
6.	How to Build A Biological Oscillator	140
	Overview.....	141
	Mechanisms.....	144
	Single Neuron Model.....	147
	Oscillatory Responses	149
	Asymmetric Amplitude Modulation.....	152
	Temporal Decoding	154
	Pathology	157
	Specificity Paradox	159
7.	Kinetic Proofreading and Conformational Proofreading	159
	Theoretical Considerations	162
	Structure.....	166
	Cofactors.....	171
	Proximity and Orientation.....	175
	Conformational Proofreading.....	180

Biological Systems	183
In Other Biological Systems	188
Robust Signalling	189
Key Aspects of Robust Signaling:.....	190
Sexual Selection.....	191
Handicap Principle.....	194
Sexual Selection.....	199
Predictions And Interpretations	205
Costly Signaling Theory	207
Food Sharing	214
Public Philanthropy.....	221
Chemotaxis	225
Mechanisms of Chemotaxis	226
Signal Transduction	228
Eukaryotic Chemotaxis.....	231
Mechanotaxis.....	238
Plithotaxis	241
Cause	245
Mutal Resistance in Tissues	245
Diagnosis.....	250
Pancreatic Beta Cell Function	254
Hyperinsulinemia.....	256
Infection	260
Pathophysiology	261
Disease.....	263
Pcr-Based Diagnostics.....	269
Contagiousness	274
Bibliography	277
Index	279

An Introduction to Systems Biology

"An Introduction to Systems Biology" by Leo Collins is a foundational text designed to introduce readers to the interdisciplinary field of systems biology. This book delves into the complex interactions within biological systems, integrating concepts from biology, mathematics, and computer science to provide a comprehensive understanding of living organisms at the systems level. It covers essential topics such as network theory, computational modeling, and the dynamics of biological networks. Through clear explanations and real-world examples, Collins elucidates how systems biology can be used to unravel the intricacies of cellular processes and organismal behavior. Ideal for students and researchers, this book serves as both an introductory guide and a valuable reference for those looking to explore the quantitative and computational aspects of modern biology.

Contents: •Transcription Networks basic concepts •Autoregulation •Models in Systems Biology •Transcription factor •Bistability and Memory •How to Build a Biological Oscillator •Kinetic Proofreading and Conformational Proofreading •Robust Signalling •Chemotaxis •Mutal Resistance in Tissues.



Leo Collins is a distinguished biologist with a passion for integrating mathematical and computational approaches into the study of biological systems. With a career spanning over two decades, Collins has made significant contributions to the field of systems biology, focusing on the complex interactions that govern cellular and organismal functions. His research interests include network theory, computational modeling, and the application of quantitative methods to biological problems. Collins

is renowned for his ability to communicate complex scientific concepts in an accessible and engaging manner, making his work invaluable to both students and fellow researchers. His dedication to advancing the understanding of biological systems has earned him a respected place in the scientific community.



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