The Shaping of Life

Biological development, how organisms acquire their form, is one of the great frontiers in science. While a vast knowledge of the molecules involved in development has been gained in recent decades, big questions remain on the molecular organization and physics that shape cells, tissues and organisms. Physical scientists and biologists traditionally have very different backgrounds and perspectives, yet some of the fundamental questions in developmental biology will only be answered by combining expertise from a range of disciplines. This book is a personal account of an interdisciplinary approach to studying biological pattern formation. It articulates the power of studying dynamics in development: that, to understand how an organism is made, we must know not only the structure of its molecules; we must also understand how they interact and how fast they do so.

LIONEL G. HARRISON (1929–2008) was Professor Emeritus in the Department of Chemistry, University of British Columbia, where he was a Faculty member for 50 years. A physical chemist by training, he was inspired to study biological form and 'in developmental biology ... found something different and immensely exciting: a field with a Great Unknown' as he wrote in his 1993 book *Kinetic Theory of Living Pattern*. 'To pursue it is like trying to account for the rainbow in the 14th century, to do celestial mechanics before Newton, or to pursue quantum theory in the 1890s.'

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