The Epigenetics Revolution: How Modern Biology Is Rewriting Our Understanding of Genetics, Disease, and Inheritance

Epigenetics can potentially revolutionize our understanding of the structure and behavior of biological life on Earth. It explains why mapping an organism's genetic code is not enough to determine how it develops or acts and shows how nurture combines with nature to engineer biological diversity. Surveying the twenty-year history of the field while also highlighting its latest findings and innovations, this volume provides a readily understandable introduction to the foundations of epigenetics.

Nessa Carey, a leading epigenetics researcher, connects the field's arguments to such diverse phenomena as how ants and queen bees control their colonies; why tortoiseshell cats are always female; why some plants need cold weather before they can flower; and how our bodies age and develop disease. Reaching beyond biology, epigenetics now informs work on drug addiction, the long-term effects of famine, and the physical and psychological consequences of childhood trauma. Carey concludes with a discussion of the future directions for this research and its ability to improve human health and well-being. The new scientific field, epigenetics, is revolutionizing our understanding of the structure and behavior of biological life on Earth. Epigenetic ideas help explain why mapping an organism's genetic code is simply not enough to determine how it develops or acts, and shows how nurture combines with nature to engineer biological diversity. Surveying some of the key scientific investigations and breakthroughs in this field over the past twenty years, Nessa Carey paints a broad intellectual canvas that readers of science and medicine will find both fascinating and promising. Her book helps us discover how we are much more than the sum of our genetic codes.Nessa Carey is a visiting professor at Imperial College in London and currently works in the biotechnology and pharmaceutical industries, where she has specialized in epigenetics for nearly a decade. She has strong relationships with leading epigenetics researchers, medical labs in Europe, and with some of the most prestigious institutions in the United States, including the Harvard Medical School, the MD Anderson Cancer Center, and the Wistar Institute.

Other Books

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