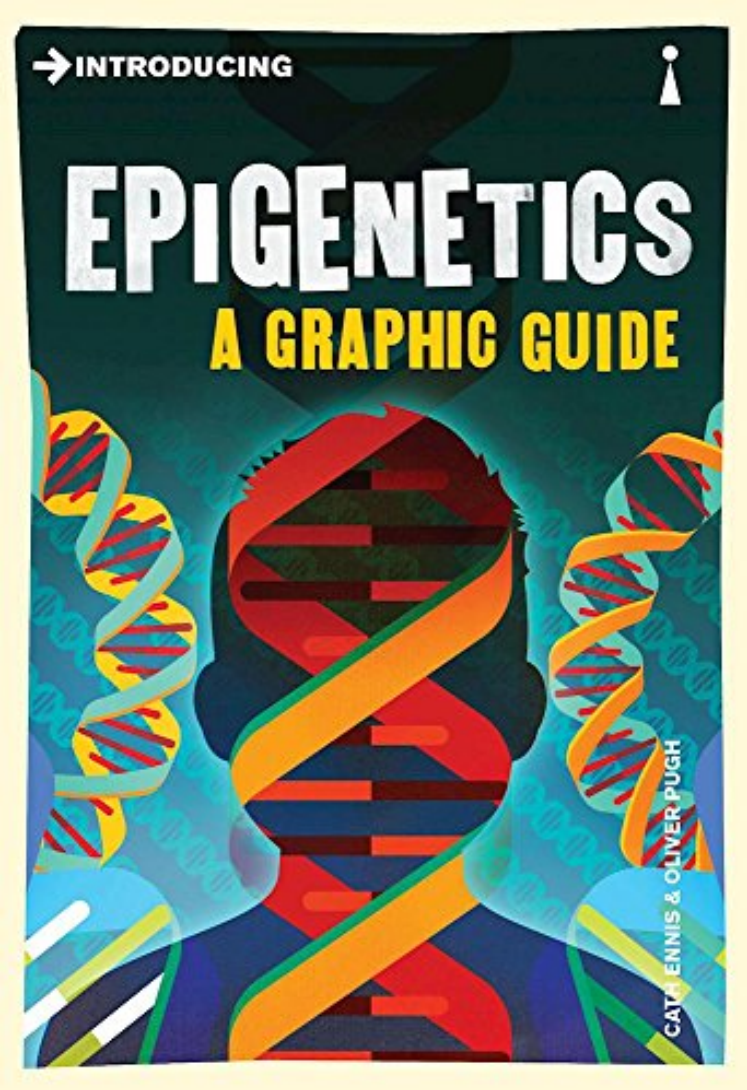
Introducing Epigenetics: A Graphic Guide

Cath Ennis
*audiobook | *ebooks | Download PDF | ePub | DOC*



#134335 in Books ICON 2017-04-11Original language:EnglishPDF # 1 6.70 x .50 x 4.70l, .0 #File Name: 1848318626176 pagesICON | File size: 39.Mb

Cath Ennis : Introducing Epigenetics: A Graphic Guide before purchasing it in order to gage whether or not it would be worth my time, and all praised Introducing Epigenetics: A Graphic Guide:

27 of 28 people found the following review helpful. DNA defines an organism: epigenetics tells how to translate that code into a real live organismBy Graham H. SeibertAs the book explains, while DNA is the code that defines an organism, epigenetics provides the notes on how to translate the code into a real live organism.The book is formatted for modern readers. It is short as Kindle books go only 1385 locations. It is divided into chapters about one page each in length. I include the chapter index at the end of the review. It is rich in diagrams.In writing such a book, the author

must strike a balance between readability and completeness. She has to make some assumptions about the reader. This book appears to assume that the reader will be college educated, not flummoxed by the introduction of new technical terms, and somewhat familiar with genetics. In other words, it is not for everybody.I am 50 years out of college but have read much of the popular literature on genetics, starting with Dawkins' Selfish Gene. I found that the book demanded my attention, forcing me to reread a few chapters in order to fully grasp the concepts, but in the end quite satisfying.DNA, the blueprint for our bodies, is invariant. Every cell of the body contains the same long, complex DNA molecules. However, DNA always exists among other, supporting molecules, which do differ from cell to cell. These epigenetic assistants control how the information from the DNA is translated into building proteins for the various types of cells within the body.DNA stands for diribonucleic acid the double helix, half from the father, half from the mother. RNA stands for ribonucleic acid, the more general form. Proteins are formed by what is called messenger RNA. These molecules are copied from short subsets of the whole DNA molecule. Messenger RNA tells the cell how to build the proteins required to be, for instance, a brain cell or a liver cell.The structures surrounding DNA in a given cell includes markers that control which part of the DNA will be used as templates for building amino acids within the cell and which will be ignored. There are different structures for different cells.As the chapter titles below indicate, a lot of things affect the epigenetic material surrounding DNA. Among these are aging and exposure to chemicals such as those in tobacco. While the DNA may not change within an individual, the body parts made according to that DNA model do change via epigenetics.Epigenetic diagnoses for disease, and epigenetic-based cures for disease our already in place, and many more appear to be on the horizon. This book will be useful reading for investors interested in the next big things in biotechnology. It will help them read investment product prospectuses and annual reports from companies involved in esoteric new technologies.The book is truly a five-star effort. The author deserves a great deal of credit for striking such a good balance among readability, completeness and bulk.The chapter titles:Genes, RNA and ProteinsChromosomes, Nucleosomes and ChromatinDNA Replication and MitosisMeiosis and InheritanceBeyond the DNA Sequence: Gene RegulationNature and NurtureTwin StudiesThe History of EpigeneticsThe Modern Understanding of Epigenetic ModificationsDNA MethylationHistone ModificationsChromatin RemodellingNuclear LocationRNAInteractions Between Different Epigenetic ModificationsEpigenetics Explains What Genetics Alone CannotEpigenetic Changes During Embryonic DevelopmentX Chromosome InactivationHow Our Environment Affects Our GenesNot So Identical TwinsEpigenetic InheritanceEpigenetic Inheritance in Animal ModelsHuman Epigenetic Inheritance: The Dutch Hunger WinterHuman Epigenetic Inheritance: verkalixMechanisms of Epigenetic InheritanceEpigenetics in EvolutionEpigenetics in Disease: AgeingEpigenetics in Disease: Inherited Mutations in EpigeneticRegulatorsEpigenetics in Disease: Imprinting ErrorsThe Epigenetics of CancerEpigenetics in MedicineStem Cell TherapiesEpigenetics and PseudoscienceThe Future of EpigeneticsEpigenomicsNew Epigenetic ModificationsThe EpitranscriptomeEpigenetic EditingEpigen-EthicsLooking AheadGlossaryRecommended Further ReadingAuthors Acknowledgements0 of 0 people found the following review helpful. Introducing the Future in a Fun and Informative Way.By Not a reviewerThis is a fascinating but very complicated topic that has a great deal of importance in the future of life as we know it. This book went a long way toward helping clarify certain things and doing it with humor. It helped in my class papers.0 of 0 people found the following review helpful. Not really graphicsBy B. StewartA lot of wasted space on "graphics" that are not at all helpful. Not much detail so not for beginners. Also a lot of time spent trying to turn adaption into evolution.

Epigenetics is the most exciting field in biology today, developing our understanding of disease, hereditary traits, and evolution.In a striking comic-book style, Introducing Epigenetics pulls apart the double helix, illustrating the key concepts in cell biology and exploring the route from Pythagoras's theory of "spermism" through the Human Genome Project to the present day.

About the AuthorCath Ennis has a research background in genetics, genomics and cancer, and works as a grant writer and project manager in Vancouver, Canada. She writes about epigenetics and other topics for The Guardian, has co-written a textbook on stem cell science, and can be found online at enniscath.com.Oliver Pugh is a designer and illustrator.