

Genome Chaos

Rethinking Genetics, Evolution,
and Molecular Medicine

Henry H. Heng

In recent years, human genomics research has focused primarily on the decoding of genes through large-scale sequencing, with an emphasis on identifying specific genetic errors to develop biomarkers and precision therapies. However, to-date, large-scale omics projects have led to more questions than answers. In *Genome Chaos: Rethinking Genetics, Evolution, and Molecular Medicine*, celebrated biologist Henry H. Heng, author of *Debating Cancer: The Paradox in Cancer Research*, gathers the most pressing of these questions and offers alternative explanations through the lens of the Genome Theory.

- Critically addresses key paradoxes in genomics, evolution, and cancer research, including the limitations of gene-based information, the main function of sex, and the challenges of using natural selection to explain evolution.
- Proposes and details a new conceptual framework based on recent leaps in genomic research: the Genome Theory, where chromosomal topologies play a key role in defining biosystems and genomic inheritance. This new concept solves the confusing puzzles left behind from Mendelian genetics.
- Bridges basic research and clinical applications; provides a foundation for reexamining the results of large-scale omics studies and advancing molecular medicine.
- Eight evidence-based chapters discuss 4D-genomics, genes and genomes as distinct biological entities, genome chaos and macro-cellular evolution, chromosomal coding and fuzzy inheritance, the function of sex, new evolutionary concepts, and rationales and challenges for molecular medicine.



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