# BIOINFORMATICS AND FUNCTIONAL GENOMICS

third edition

**Jonathan Pevsner**

WILEY Blackwell

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# Bioinformatics and Functional Genomics

*Third Edition*


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and

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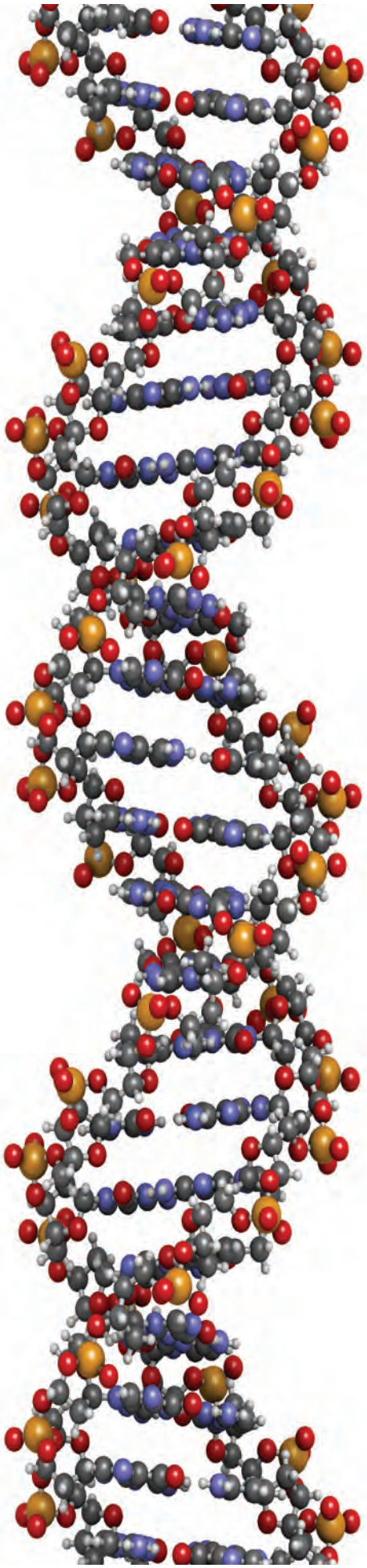


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The cover image is by Leonardo da Vinci, a study of a man in profile with studies of horse and riders (reproduced with kind permission of the Gallerie d'Accademia, Venice, Ms. 7r [236r], pen, black and red chalk). To the upper right a DNA molecule is shown (image courtesy of Wikimedia Commons) and a protein (human serum albumin, the most abundant protein in blood plasma, accession 1E7I, visualized with Cn3D software described in Chapter 13). Leonardo's text reads: "From the eyebrow to the junction of the lip with the chin, and the angle of the jaw and the upper angle where the ear joins the temple will be a perfect square. And each side by itself is half the head. The hollow of the cheek bone occurs half way between the tip of the nose and the top of the jaw bone, which is the lower angle of the setting on of the ear, in the frame here represented. From the angle of the eye-socket to the ear is as far as the length of the ear, or the third of the face." (Translation by Jean-Paul Richter, *The Notebooks of Leonardo da Vinci*, London, 1883.)

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*For three generations of family: to my parents*
*Aihud and Lucille; to my wife Barbara; to my daughters Kim,*
*Ava, and Lillian; and to my niece Madeline*

# Contents in Brief

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