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Nota di contenuto	Part I - Nuclear Periphery -- 1.Laminopathies/Howard Worman -- Part II Nuclear Bodies -- 2.Nucleolus/Marie-Line Dubois and François-Michel Boisvert -- 3.Speckles/splicing and disease/Michael Lodomery and Sebastian Oltean -- 4.PML, cancer and stem cells/Julia P. Hofmann and Paolo Salomoni -- Part III Chromosomes -- 5.Chromosome territories/Karen J. Meaburn, Bharat Burman and Tom Misteli -- 6. Telomeres and Chromosome Instability/Tsz Wai Chu and Chantal Autexier -- PART IV Nuclear Domains and Development -- 7.Polycomb bodies/Vincenzo Pirrotta -- 8.Ikaros domains/Karen E. Brown -- PART V Nuclear Domains and Cell Stress -- 9.Senescence/SAHFs/Tamir Chandra -- 10.DNA repair foci as facultative nuclear domains/Michael J. Hendzel and Hilmar Strickfaden -- 11.DNA damage and the nucleus/Jordan Pinder, Anastazja Grabarz, Evi Soutoglou and Graham Dellaire -- 12.Inflammation and the nucleus/Sona Hubackova , Simona Moravcova and Zdenek Hodny -- 13.Viral infection and the nucleus/Lori Frappier -- PART VI Macromolecular dynamics within the nucleus -- 14.Actin filaments/motors/Guillaume Huet and Maria K. Vartiainen -- 15.Molecular diffusion/Alexander Gansen and Jörg Langowski -- PART VII Chromatin transactions and epigenetics -- 16.

Fibres/interactions/Christopher J.F. Cameron, James Fraser, Mathieu Blanchette, and Josée Dostie -- 17.DNA replication Sebastian Müller, Dan Filipescu and Geneviève Almouzni -- 18.Development and Epigenetics Nuphar Salts and Eran Meshorer -- 19.Epigenetics and disease/Sanaa Choufani and Rosanna Weksberg -- PART VIII Transcription and RNA metabolism -- 20.Transcription factories/Christopher Eskiw and Jenifer Mitchell -- 21.RNA transport Jonathan Sheinberger and Yaron Shav-Tal. .

Sommario/riassunto

This book gives an in-depth overview on nuclear structure and function. It clearly shows that the epigenome and the three-dimensional organization of the nucleus are not independent properties. The intimate relationship between the location and the epigenetic modifications of gene loci is highlighted. Finally, it shows that the complex three-dimensional organization of the nucleus is not just of academic interest: The structure, composition and function of virtually all of the sub-nuclear compartments identified so far can be implicated to a list of human genetic diseases. Hence, a detailed elucidation of how these domains are assembled and function will provide new opportunities for therapeutic intervention in clinical practice.
