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Titolo	Nuclear Functions in Plant Transcription, Signaling and Development / / edited by Olga Pontes, Hailing Jin
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ISBN	1-4939-2386-2
Edizione	[1st ed. 2015.]
Descrizione fisica	1 online resource (187 p.)
Disciplina	570 571.2 581.35 631.52 660.6
Soggetti	Plant breeding Plant genetics Plant physiology Plant Breeding/Biotechnology Plant Genetics and Genomics Plant Physiology
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	RNA-directed DNA methylation and transcriptional silencing in Arabidopsis -- The role of DNA methylation in transposable element silencing and genomic imprinting -- Nuclear Bodies and Responses to the Environments -- Plasticity of Chromatin Organization in the Plant Interphase Nucleus -- Role of Epigenetic Modifications in Plant Responses to Environmental Stresses -- Setting the Stage for the Next Generation: Epigenetic Reprogramming during Sexual Plant Reproduction -- Epigenetic Modifications at Developmental Transitions in Arabidopsis -- Mechanisms of Transposable Element Evolution in Plants and their Effects on Gene Expression -- Population Epigenetics.
Sommario/riassunto	This book compiles a series of landmark discussions on the recent advances in plant nuclear biology research, and offers new perspectives into the functional relevance of the arrangement of genomes and

nuclear processes that impact plant physiology and development. The work provides insight as to how genes are switched on or off and are tuned to specific expression levels, which allow us to better predict plant phenotypes. Overall, a better understanding of the fundamentals of plant gene expression will aid in the more efficient design of numerous biotechnological applications and plant breeding programs. This new knowledge will provide a foundation for solving both agricultural and environmental problems as well as developing practices that enable global sustainability. Plant biology is also relevant to human biology, as several aspects of underlying mechanisms are conserved between both organisms. Understanding this shared biology will shed light on human diseases, and could lead to better therapies for cancer and genetic diseases.