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Sommario/riassunto	<p>Abiotic stresses such as high temperature, low-temperature, drought and salinity limit crop productivity worldwide. Understanding plant responses to these stresses is essential for rational engineering of crop plants. In Arabidopsis, the signal transduction pathways for abiotic stresses, light, several phytohormones and pathogenesis have been elucidated. A significant portion of plant genomes (Arabidopsis and rice were mostly studied) encodes for proteins involved in signaling such as receptor, sensors, kinases, phosphatases, transcription factors and transporters/channels. Despite decades of physiological and molecular effort, knowledge pertaining to how plants sense and transduce low and high temperature, low-water availability (drought), water-submergence, microgravity and salinity signals is still a major question for plant biologist. One major constraint hampering our understanding of these signal transduction processes in plants has been the lack or slow pace of application of molecular genomic and genetics knowledge in the form of gene function. In the post-genomic era, one of the major challenges is investigation and understanding of multiple genes and gene families regulating a particular physiological and developmental aspect of plant life cycle. One of the important physiological processes is regulation of stress response, which leads to adaptation or adjustment in response to adverse stimuli. With the holistic understanding of the signaling pathways involving not only one gene family but multiple genes or gene families, plant biologist can lay a</p>

foundation for designing and generating future crops, which can withstand the higher degree of environmental stresses (especially abiotic stresses, which are the major cause of crop loss throughout the world) without losing crop yield and productivity. Therefore, in this e-Book, we intend to incorporate the contribution from leading plant biologists to elucidate several aspects of stress signaling by functional genomics approaches.
