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Sommario/riassunto	Activity of the multi-functional networked neurons depends on their intrinsic states and bears both cell- and network-defined features. Firing patterns of a neuron are conventionally attributed to spatial-temporal organization of inputs received from the network-mates via synapses, in vast majority dendritic. This attribution reflects widespread views of the within-cell job sharing, such that the main function of the dendrites is to receive signals and deliver them to the axo-somatic trigger zone, which actually generates the output pattern. However, these views are now revisited due to finding of active, non-linear properties of the dendritic membrane practically in neurons of practically all explored types. Like soma and axon, the dendrites with active membrane are able to generate self-maintained, propagating depolarizations and thus share intrinsic pattern-forming role with the trigger zone. Unlike the trigger zone, the dendrites have complex geometry, which is subject to developmental, activity-dependent, or neurodegenerative changes. Structural features of the arborization inevitably impact on electrical states and cooperative behavior of its constituting parts at different levels of organization, from sub-trees and branches to voltage- and ligand-gated ion channels populating the dendritic membrane. More than two decades of experimental and computer simulation studies have brought numerous phenomenological demonstrations of influence of the dendritic structure on neuronal firing patterns. A necessary step forward is to

comprehend these findings and build a firm theoretical basis, including quantitative relationships between geometrical and electrical characteristics determining intrinsic activity of neurons. The articles in this eBook represent progress achieved in a broad circle of laboratories studied various aspects of structure and function of the neuronal dendrites. The authors elucidate new details of dendritic mechanisms underlying intrinsic activity patterns in neurons and highlight important questions that remain open in this important domain of cellular and computational neuroscience.