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Nota di contenuto	Introduction -- Protein Folding, Part I: Basic Principles -- Protein Folding, Part II: Energy Landscapes and Protein Dynamics -- Protein Misfolding and Aggregation -- Protein Quality Control, Part I: Molecular Chaperones and the Ubiquitin-Proteasome System -- Protein Quality Control, Part II: Autophagy and Aging -- Prion Diseases -- Alzheimer's Disease -- Parkinson's Disease -- Huntington's Disease and other Unstable Repeat Disorders -- Amyotrophic Lateral Sclerosis and Frontotemporal Lobar Degeneration.
Sommario/riassunto	This unique text introduces students and researchers to the world of misfolded proteins, toxic oligomers, and amyloid assemblages, and the

diseases of the brain that result. During the past few years the connections between failures in protein quality control and neurological disorders have been reinforced and strengthened by discoveries on multiple fronts. These findings provide novel insights on how amyloidogenic oligomers and fibrils form, interconvert from one state to another, and propagate from cell to cell and region to region. Starting with protein folding and protein quality control basics, the reader will learn how misfolded proteins can cause diseases ranging from prion diseases to Alzheimer's disease and Parkinson's disease to Huntington's disease, amyotrophic lateral sclerosis and frontotemporal lobar degeneration. Authoritative but written in a clear and engaging style, *Fundamentals of Neurodegeneration and Protein Misfolding Disorders* addresses one of today's forefront areas of science and medicine. The text emphasizes the new groundbreaking biophysical and biochemical methods that enable molecular-level explorations and the conceptual breakthroughs that result. It contains separate chapters on each of the major disease classes. Special emphasis is placed on those factors and themes that are common to the diseases, especially failures in synaptic transmission, mitochondrial control, and axonal transport; breakdowns in RNA processing; the potential role of environmental factors; and the confounding effects of neuroinflammation. The book is ideal for use in teaching at the advanced undergraduate and graduate levels, and serves as a comprehensive reference for a broad audience of students and researchers in neuroscience, molecular biology, biological physics and biomedical engineering.

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