This book brings together an internationally respected group of researchers for the purpose of examining neuroplasticity, a topic of immense current interest in psychology, neuroscience, neuropsychology, and clinical neurology.

The chapters represent state-of-the-art work on neuroplasticity at all levels: behavioral, neural, and molecular. They describe recent work on memory ranging from cellular morphological studies in invertebrates to research on the human brain made possible by new advances in neuroimaging technology. The book begins with an introductory chapter that considers the psychology of memory at the global, structural level. The remainder of the volume is divided into three related parts. The first focuses on recent approaches, which are based in part on new technology, that aim to measure and describe activity in relatively large populations of neurons. The second focuses on memory at the level of brain systems. One major theme to emerge from work at this level is that memory is composed of multiple, separable components that can be identified with specific anatomical structures and connections. The third part of the book focuses on molecular and cellular studies that show how individual neurons and their synapses behave in a history-dependent manner. This research concerns both brief changes in synaptic plasticity as well as more lasting changes in connectivity, which depend on altered gene expression and morphological growth and change.

Altogether, the chapters provide a rich summary of the breadth and excitement of contemporary research on the biology of memory.

Features:
* A state-of-the-art work on a topic of immense current interest
* Editors are widely known and are associated with the center for the Neurobiology of Learning and Memory at UC, Irvine, one of the premier research centers for the study of memory and the brain
* Squire is the author of Memory and Brain (OUP, 1987), which has sold 9,000 copies in paperback