With contributions from leading scientists around the world, this is the first book focusing on the analysis of nerve cell damage and repair using genomics, transcriptomics, proteomics, glycomics and systems biology in order to develop novel therapeutic and diagnostic approaches for neural diseases.

Following an introduction into the microarray technology in translational neuroscience, the book goes on to look at the use of '-omics' technologies to analyse molecular changes in traumatic injury, neuron degeneration and regeneration, oxidative stress response, neuropathic pain manifestation, and more. The work covers central nervous system as well as peripheral nervous system pathologies. This novel approach makes the book an indispensable companion for neurobiologists, neurologists, cell and molecular biologists, geneticists, and analytical chemists.