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More Than Pain: Functions and Mechanisms of Ongoing Activity in Nociceptors

Edgar (Terry) Walters received his Ph.D. in Physiology from Columbia University in 1980. In 1982 he became a faculty member at the University of Texas Medical School in Houston (now McGovern Medical School), where he is currently Professor of Integrative Biology and Pharmacology and holder of the Fondren Chair in Cellular Signaling. His early research was on plasticity in nociceptive sensory neurons related to tissue and nerve injury in invertebrate models (Aplysia, squid), with discoveries of unexpected mechanistic overlap and potential evolutionary links with neural plasticity underlying learning and memory. More recent research, with valued colleagues and collaborators, has been on the contributions of nociceptor plasticity to persistent pain in mammals, including pain induced by spinal cord injury, surgical procedures, or chemotherapy. Current emphases are on the functions and mechanisms (including specific excitability alterations and associated ion channels and cell signaling pathways) that drive spontaneous electrical activity in mouse, rat, and human nociceptors to persistently promote pain after biologically significant injuries.