DESCRIPTION

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The biochemical mechanisms underlying the changes in brain and behavior produced by chronic exposure to drugs of abuse, in particular psychomotor stimulants and alcohol. Current research focuses on the role of postsynaptic scaffolding proteins regulating extracellular glutamate and glutamate receptor function in drug- and stressor-induced changes in brain and behavior. Related research examines the role of glutamate signaling in neuropsychiatric disorders associated with addiction, such as psychosis and depression. Her research employs transgenic mice, adeno-associated viral vectors and neuropharmacological approaches to examine the consequences of manipulating forebrain glutamate upon on binge alcohol-drinking, the incubation of cocaine-craving, and methamphetamine preference and intake. More recent work seeks to develop novel mouse models of oral methamphetamine and prescription opioid-taking for the high-throughput study of genetic variance in drug abuse. The techniques employed in her laboratory include a variety of assays for undrugged and drug-induced changes behavior, in vivo microdialysis, Western blotting, and immunocytochemistry. Dr. Szumlinski's laboratory is involved in a number of collaborative projects with other faculty within the Departments of Psychological and Brain Sciences and Molecular, Cellular and Developmental Biology, as well as with several research laboratories within the United States and abroad. Her laboratory is currently funded by NIH, as well as by support from UCSB.

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