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Primary Research Interest:	Anesthesiology
Description of Research:	<p>Research in my laboratory focuses on the neurophysiological mechanisms that underlie inhibitory brain circuits. Enhancement of inhibitory pathways of the brain naturally lead to the familiar quiescent states of sleep and anesthesia. However, modulation of inhibitory networks in the brain also has profound implications on attention, memory, pain, and anxiety. Quiescent activity that resembles sleep or the anesthetized state is not unique to complex organisms like mammals and birds but has been observed in fruit flies, nematodes, and yeast; emphasizing how important these inhibitory circuits are to brain function. An organism's response to injury also influences the inhibitory signaling pathways in the brain.</p>
Relevance to VA:	<p>We believe this research will greatly benefit the VA and eventually veterans and nonveterans receiving medical and surgical treatments. Cognitive diseases associated with administration of anesthetics or other sedating medications are an important problem as delirium and other cognitive disturbances are associated with escalation of care, increased health care costs, and significant morbidity and mortality.</p>