Satellite glial cells (SGCs) closely envelop cell bodies of neurons in sensory, sympathetic and parasympathetic ganglia. SGCs are activated in sensory ganglia following inflammation or nerve injuries; their contribution in chronic pain is under intensive investigation. Moreover, the physiological roles of SGCs in peripheral ganglia are lesser known. We have identified that satellite glial Gq-GPCR activation in sensory ganglia alleviates the pain symptom in mice, suggesting the analgesic role of satellite glial signaling in vivo. In this seminar, we will discuss our findings on the analgesic role of sensory SGCs using animal models of inflammatory pain and visceral pain. We will also discuss our recent transcriptome data suggesting glial-neuron mechanisms in sensory ganglia during the pathogenesis of chronic pelvic pain symptoms in mice.