



Towards Understanding Nerve Repair: From Neuronal Signaling to Glial Modulation

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Research in my laboratory focuses on studying injury and regeneration of peripheral nerves, which carry sensory information from the environment and internal organs to the brain. We have identified several key molecular and cellular players and their roles in announcing injury, initiating a response, and carrying out repair. We are studying whether these cellular players can be used to restore sensory function after spinal cord or optic nerve injury and improve repair when it declines with aging or with treatments such as chemotherapy. As a natural extension of our studies on sensory neuron biology, we are also exploring how sensory perceptions such as touch and sound contribute to autism, a spectrum of developmental disorders characterized by altered sensitivity to sensory stimuli. Using human tissue, we investigate how the findings made in the mouse model system translates to human physiology. Together, our studies point to the importance of better understanding the contribution of multiple cell types to nerve injury responses and sensory dysfunctions, which may pave the way for translating discoveries into new treatments of nerve injury and disease.
