

**NON -TECHNICAL ABSTRACT:** *(State in layman's terms the application's broad, long-term objectives and specific aims, making reference to the potential public benefits of the project for California.)*

One of the principal tools used by neurologists in the assessment of diseases of the peripheral nervous system (peripheral neuropathies) such as carpal tunnel syndrome, chronic inflammatory demyelinating polyneuropathy and diabetic peripheral neuropathy is the nerve conduction velocity test. This test provides a single parameter measurement used to assess the quality of conduction of the peripheral nerve trunk under study. The Group Delay technique that has been proposed and published by the principal investigator can be implemented with conventional electromyography clinical equipment but yields information as to the size distribution of surviving nerve fibers in the nerve trunk. Size and/or conduction velocity distribution information can provide the clinician with additional information useful in the diagnosis of peripheral neuropathies. This proposal outlines a pilot experimental study aimed at validating the efficacy of the proposed Group Delay technique.