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*2004 Program
New Investigator (3-year project)*

Project Title: The Role of DNA Structure in Telomerase Activity and Telomere Function

Project Summary: A hallmark of cancer is the disruption in organization of the cellular genome. There is increasing evidence that genomic integrity relies on a specialized chromosomal structure called the telomere. Further evidence links telomere dysfunction to tobacco use. With this connection in mind, the studies in this proposal have been designed to examine the biochemical contributions in assembling specific telomere configurations. This research will also provide additional biochemical tools for testing the efficacy of anti-cancer agents designed to target particular DNA structures. Moreover, by modeling the structures of and actions upon healthy vs. disrupted telomeres, this research will help elucidate the mechanisms of telomere-associated genomic instability caused by tobacco products.