

Bankhead-Coley Cancer Research Program

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*Anatomy and Cell Biology
University of Florida*

*2008 Program
New Investigator (3-year project)*

Project Title: Targeting A-type Lamins as a Cancer Therapy

Project Summary: We propose to target lamin A in order to inhibit cancer progression. Our overall hypothesis is that mechanisms of cell senescence observed in patients with Hutchinson-Gilford progeria syndrome (HGPS) can be harnessed to treat various forms of cancer. Mutations in the gene encoding A-type lamins (lamins A/C) lead to HGPS, a disease resembling premature aging. The most common of these mutations inhibits complete processing of prelamin A; however, other mutations alter the surface of the lamin molecule at a discrete site. In this grant, we are using multiple experimental approaches that capitalize on both types of mutations to create anti-cancer therapies. Furthermore, we are investigating the mechanism(s) behind lamin A-dependent progeria to identify new targets for an anti-cancer treatment. We envision a future therapy in which a transient induction of A-type lamin-dependent cell senescence and death would arrest the growth of, and ultimately lead to the destruction of, rapidly dividing cancer cells.