

Bankhead-Coley Cancer Research Program

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*Surgery
University of Miami*

*2009 Program
New Investigator (3-year project)*

Project Title: The NOTCH Signaling in Melanoma

Project Summary: Arising from pigmented epidermal melanocytes, melanoma is the most lethal skin cancer and its incidence rate has been rising rapidly in the last several decades. Melanoma is highly metastatic and resistant to current therapeutic regimens. The identification of novel, critical molecular pathways involved in melanoma development and progression will lead to more effective targeted therapies. Involvements of NOTCH signaling in melanoma have recently been highlighted. (NOTCH is a protein spanning the cell membrane and is important for cell-cell communication.) We and others have demonstrated that the NOTCH pathway is activated in human melanoma. Moreover, we have observed that activated NOTCH signaling is oncogenic in promoting melanocytic transformation and facilitating progression of primary melanoma. Our working hypothesis is that aberrant NOTCH signaling is a crucial oncogenic promoter in driving melanoma development and progression. In this grant, we are aiming at elucidation of the precise molecular and signaling mechanisms underlying the oncogenic NOTCH signaling in promoting melanoma development and progression. Findings from our study will provide guidance and molecular targets for developing therapeutic strategy to combat this deadly skin cancer.