

Bankhead-Coley Cancer Research Program

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*Population Sciences
H. Lee Moffitt Cancer Center & Research Institute*

*2009 Program
Shared Instrument Grant
(1-year project)*

Project Title: Acquisition of the Illumina BeadXpress System for Bead Array-Based Genotyping and Gene Expression Analysis

Project Summary: Research on cancer has shifted from the study of individual molecules to the large-scale survey of the tumor and the individual affected by the disease. High throughput technologies now provide thousands of pieces of information about the factors that predispose the development of cancer, the specific mutations that gave rise to an individual tumor, the physiology of a tumor, and the physiology of the patient. The volume of data produced from the analysis of each tumor/patient allows for a more comprehensive molecular evaluation of individual tumors and will be essential, in the future, for establishing the correct form of treatment for individual patients. The Illumina BeadXpress system is a medium-to-high throughput system for the analysis of genotypes, gene expression, and protein expression that will allow researchers to perform several different types of large-scale surveys of tumors and native DNA. This instrument can be used for targeted genome analysis in epidemiological studies of the causes of cancer and for the validation of gene expression and protein expression markers of cancer types identified by other technologies. The coordinated evaluation of the data generated with the Illumina BeadXpress system will greatly enhance our understanding of how individuals vary in their predisposition to cancer, contribute to the development of molecular profiles indicative of specific treatment regimens, and define risks for specific side effects of therapy.