Proposal Summary:

As the most serious form of skin cancer, melanoma is a considerable public health burden. In 2010, there will be an estimated 68,130 new cases and 8,700 deaths from melanoma in the United States alone (1). While melanoma has several environmental risk factors which seem largely preventable, such as ultraviolet radiation exposure, both germline (2) and somatic (3) genetic factors have also been strongly implicated. Genome wide association studies have been successful in identifying several loci which are important to melanoma susceptibility (4-5). Some of the susceptibility genes that have been identified in melanoma, such as CDKN2A and
MC1R, have been associated with other cancers as well (6). However, pleiotropic effects of gene variants identified for other cancers have not been fully explored for melanoma. The PAGE study provides a unique opportunity to evaluate pleiotropic associations across ethnic and racial groups. This study proposes to determine whether GWAS hits from non-melanoma cancers are also associated with melanoma. We further aim to explore interactions between known GWAS hits and known environmental risk factors.