

## Bankhead-Coley Cancer Research Program

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Bridge (1-year project)*

**Project Title:** Molecular Mechanism Underlying the Resistance of Ovarian Cancers to Vitamin D

**Project Summary:** Although 1,25VD has been shown to suppress the cell growth of many human cancers, the clinical trials with synthetic 1,25VD analog for human cancers were met with limited success, suggesting that the understanding of the mechanism underlying the primary or acquired resistance to the 1,25VD-induced growth suppression is an important area of research that may improve the response of cancer patients to 1-25VD-based hormonal therapy. This proposal examines the mechanism underlying the alteration of the growth suppression by 1,25VD during ovarian tumorigenesis that causes resistance of frankly malignant OCa to the hormone. If the hypothesis is substantiated by studies proposed in the application and the three specific aims are achieved, the study may lead to the development of a novel strategy to overcome the resistance, allowing more OCa patients to benefit from the 1,25VD-based therapeutic treatment. Since the role of p21-activated kinases (PAKs) in ovarian tumorigenesis has not been investigated, the studies about PAK4 may reveal a novel oncogenic pathway that contributes to ovarian epithelial tumorigenesis.