

DIVISION OF PHARMACEUTICAL SCIENCE  
COLLEGE OF PHARMACY

SUMMER RESEARCH OPPORTUNITIES FOR UNDERGRADUATE WOMEN

APPLICATION DEADLINE: 03/01/2020

PROJECT TITLE: Targeting the tumor matrix to overcome drug resistance in BRAF mutant melanoma

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**Project Description**

Melanoma cells develop both intrinsic and acquired drug resistance within a protective tumor stroma, which consists of a heterogeneous mix of non-cancer cells, including endothelial cells, immune cells, and fibroblasts, embedded in a tumor-specific extracellular matrix (ECM). In particular, Transdifferentiated cancer-associated fibroblasts (CAFs) that surround and infiltrate the melanoma stroma respond to BRAF inhibition by remodeling the ECM and secreting adaptive signals, which together provide a "sanctuary" for a small population of melanoma cells to bypass BRAF signaling and downregulate apoptosis. In this project, the student will work with a team of postdoctoral researcher and PhD student to characterize CAF-induced ECM remodeling that contributes to the response and resistance to BRAF and MEK inhibitors in BRAF-mutant melanoma cells. We will provide to the WISE student the experience and skill training in biomedical and cancer research. The student is expected to have the biology or medical background and have interests in biomedical research.