DEPARTMENT OF CANCER BIOLOGY  
COLLEGE OF MEDICINE  

SUMMER RESEARCH OPPORTUNITIES FOR UNDERGRADUATE WOMEN  

APPLICATION DEADLINE: 03/01/2019  

PROJECT TITLE: Targeting Human Breast Cancer Metastasis by RNA Nanotechnology  

Xiaoting Zhang Ph.D.  
Department of Cancer Biology  
The Vontz Center for Molecular Studies  
Room 2316  
University of Cincinnati College of Medicine  
3125 Eden Avenue  
Cincinnati, OH 45267-0521  
Office: (513)558-3017  
Lab: (513)558-8083  
Fax: (513)558-4454  
Web: http://med.uc.edu/zhanglab  

Project Description  

Breast cancer is the most common cancer and one of the leading causes of cancer-related mortality in women worldwide. Most women do not die of breast cancer that is confined to the breast or draining lymph nodes but of tumors that spread, through a process called metastasis. Although treatments such as estrogen blockers, radiation, and chemotherapy can sometimes shrink or slow the growth of metastatic tumors, there is currently no cure once metastatic disease has occurred. Our study aims to develop novel RNA nanotechnology-based approaches to target a tissue-specific estrogen receptor cofactor MED1 and test the efficacy on human breast cancer metastasis in preclinical models. The WISE student may be assigned to various aspects of this research, including the generation and characterization of RNA nanoparticles, cell culture, cell growth, migration/invasion assays, tumor immunology, collection and analyses of the data, etc.