

CancerCure Pilot Project Awardees

Identification of human colon tissue biomarkers for cancer control and prevention

Principal Investigator: Elizabeth Ryan, PhD

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SUMMARY:

The primary goal of this proposal is to establish feasibility of collecting colon tissue during a scheduled screening or surveillance colonoscopy, as well as pre-colonoscopy stool samples from 20 participants residing in Northern Colorado. From these samples, we will evaluate colon tissue and stool metabolites using a high throughput technique called metabolomics, which has promise for population-based analyses of biomarkers for cancer risk. In our proposed study, we will examine differences in metabolites between healthy, polyp-free tissue and benign or precancerous polyps. Findings from this study will enhance our chances for R01 funding success because we will have demonstrated a feasible approach with to collect relevant colon tissues for analysis.

Addressing the role of lymphangiogenesis and obesity in breast cancer metastasis.

Co-Principal Investigators:

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Paul.MacLean@ucdenver.edu s following completion of dietary interventions.

Summary:

The presence of tumor cells in lymph nodes, termed lymph node metastasis and referred to clinically as lymph node positivity, is the most powerful predictor of breast cancer patient prognosis. However, little is understood about how cells travel to the lymph node. Dr. Lyons lab has shown that women with postpartum breast cancer have increased lymph node positivity, which is caused by an increase in the number of lymph vessels present in the breast tissue. This proposal, based on the hypothesis that obese rodents may also have an increased number of lymph vessels in the mammary tissue, will utilize rodent models developed in the MacLean lab to determine whether an increase in lymph vessels in obese rodents drives lymph node and distant metastasis, which could explain the clinical observation that obese women with breast cancer have increased lymph node positivity and metastasis.