Recruiting Lactating Women with Breast-Cancer

to Donate Breastmilk

Researchers at UMass Amherst are analyzing breastmilk from women with postpartum breast cancer or who are undergoing breast-biopsy. The IRB-approved study involves analysis of epithelial cells in the donated milk. A system is in place for shipment of milk samples from across the US to UMass.

**BreastmilkResearch.org - Kathleen Arcaro - (413) 545-0813 - Breastmilk@UMass.edu**

This project was developed by Dr. Kathleen Arcaro and Dr Brian Pentecost. It is funded by the Breast Cancer Research Program (BCRP). The formal project title is *Non-Invasive Assessment of Lactating Breasts Using Somatic Mutations and DNA Methylation as a Pre-Symptomatic Test for BRCA Breast Cancer*.

We study breastmilk in an effort to develop strategies to reduce breast-cancer-risk. Breastmilk provides a unique opportunity to non-invasively examine the breast, through sloughed cells, secreted proteins, and lipophilic environmental contaminants.

The main target population of the project is high-risk asymptomatic women who are nursing, specifically: women who have tested positive for a pathogenic *BRCA* mutation. The sloughed epithelial cells present in the milk is examined for DNA methylation and somatic mutations to uncover profiles identifying breasts at increased risk of breast disease, as well as to shed light on breast cancer development. These women are being recruited through social media (though we welcome direct introductions).

We are recruiting a reference group **of women who have a post-partum diagnosis of breast cancer**, or are undergoing a biopsy, and are able to donate a breastmilk sample. **These women are not required to be *BRCA* mutation carriers or to be aware of their *BRCA* status.** Expecting fraction of recruited asymptomatic *BRCA*-carriers to be diagnosed with breast-cancer is not a tenable option since the *BRCA*-carriers we recruit are likely to seek mastectomies after completing their families.

We hope to convert the findings into a screen for assessing current breast cancer during lactation, a period during which current screening methods are either not usable or are not fully effective, in addition to gaining further understanding of the development of BRCA-related breast cancers.