

Ardythe L. Morrow, PhD

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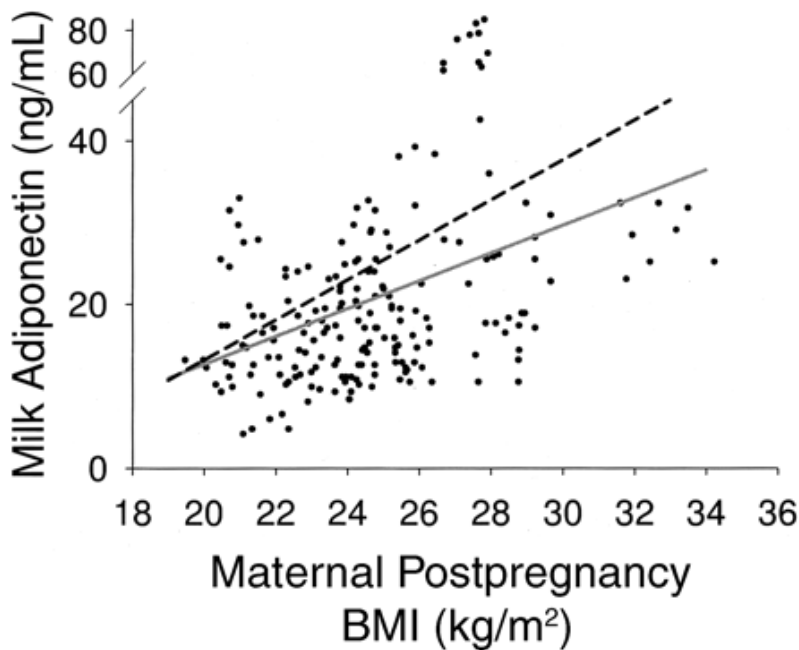
Description of Research:

Dr. Morrow's research focuses on the epidemiology of breastfeeding and human milk factors in relation to child health outcomes. The human milk program project is designed to understand the role of innate immune factors in human milk in relation to protection against obesity and diarrheal diseases in childhood. Current work is evaluating the role of human milk adiponectin in metabolic development. She has previously been able to show that human milk oligosaccharide moieties, which are synthesized by fucosyltransferases encoded by the Lewis-Secretor genes, inhibit the binding of certain enteric pathogens (noroviruses, campylobacter, stable toxin of *E. coli*, and *V. cholerae*) to host cell receptors and thereby preventing diarrhea in breastfed infants. Dr. Morrow is testing the hypothesis that these specific human milk oligosaccharides can be isolated, characterized, synthesized, and administered to prevent diarrheal disease.

Collaborations:

Dr. Morrow has collaborations with Drs. Cohen, Jiang, Martin, Rothenberg, and Warner to study the beneficial components in breast milk and has used the **Bioinformatics Core** to begin work on Microarray chip design.

Representative Figure:



Adiponectin concentrations by maternal BMI in milk samples from 199 participants in the longitudinal cohort of the Cincinnati Children's Research Human Milk Bank. The solid line represents the predicted regression line determined from the repeated-measures analysis of maternal BMI and natural log(milk adiponectin); data for 2 women ($n = 14$ longitudinal samples) with milk adiponectin concentrations >50 ng/mL ($\beta \pm SE: 0.08 \pm 0.02$) were excluded. The dashed line represents the predicted regression line including these 2 women ($\beta \pm SE: 0.10 \pm 0.02$). Three data points from 2 subjects with milk adiponectin concentrations between 45 and 60 ng/mL are not presented. From American Journal of Clinical Nutrition 2006 83:1106-1111