

The Department of Nutritional Sciences Fall 2025 Seminar Series

"Precision Prevention and Control of Breast Cancer: Integrative Insights from Diet, Biomarkers, and Omics Data"

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FSNS Building, 65 Dudley Road, New Brunswick, Room 120

Zoom option: <https://go.rutgers.edu/wang-seminar>



Breast cancer remains the most frequently diagnosed cancer and one of the leading causes of cancer death among women globally. Although substantial progress has been made in studying breast cancer risk factors, identifying modifiable prognostic factors and discovering novel metabolomic and microbial biomarkers from large population studies is still understudied. In this talk, I will present my past and ongoing research draws on data from two large cohort studies: the Nurses' Health Studies and the Women's Circle of Health Follow-Up Study. I will begin by introducing the Diabetes Risk Reduction Diet (DRRD), a dietary pattern, and discuss its association with breast cancer survival. I will also highlight how tumor biomarkers such as PTEN loss and PIK3CA mutations may help elucidate the biological mechanisms underlying the DRRD-survival relationship. Next, I will shift focus to the impact of ultra-processed food (UPF) consumption on breast cancer survival, sharing novel findings from our work among Black women with breast cancer. In the final part of the talk, I will describe my ongoing NIH-funded K99/R00 project, which investigates the role of the gut microbiome in breast cancer precursor lesions. This research takes an integrative approach, combining microbial metagenomics, metabolomics, and breast tissue pathology.