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Affiliate Faculty, MicroBiome Analysis Center and Department of Nutrition and Food Studies

Education

PhD, Epidemiology, University of Washington

Key Interests

Epidemiology | Applied Biostatistics | Diet | Microbiome | Metabolome | Cancer |
Cardiometabolic Disease | Chemical Exposure | Residential Segregation

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SELECT PUBLICATIONS

- › L. M. Miller *et al.*, Being overweight or obese is associated with harboring a gut microbial community not capable of metabolizing the soy isoflavone daidzein to O-desmethyldaidzein in peri- and post-menopausal women. *Maturitas* 99, 37-42 (2017).
- › C. L. Frankenfeld, Cardiometabolic risk and gut microbial phytoestrogen metabolite phenotypes. *Mol Nutr Food Res* (2017).
- › C. Atkinson *et al.*, Plasma equol concentration is not associated with breast cancer and fibrocystic breast conditions among women in Shanghai, China. *Nutr Res* 36(8), 863-871 (2016).

Research Focus

I apply advanced quantitative methods to research questions in the areas of nutrition, environmental health, and social determinants of health, with applications across different diseases and health conditions. My past work contributed to a foundation in research related to equol and O-desmethyldaidzein, bacterial metabolites of daidzein, a phytoestrogenic compound found predominantly in soy. My current biomedical, translational work focuses on understanding metabolome changes associated with gut microbiome profiles. The ultimate goal of this work is to understand how changes to the microbiome influence interindividual metabolism of dietary and environmental exposures. My newer public health application work is evaluating the role of complex spatial exposures on health outcomes. The ultimate goal of this work is to identify population subgroups that may benefit from different health care delivery or public health interventions based on personal characteristics and location.

Current Projects

- Metabolomics Profiling of Individuals Who Differentially Metabolize the Soy Compound Daidzein: This project is analyzing metabolomic profiles in ODMA producers and ODMA non-producers.
- Cancer Health Disparities: Modeling Social, Hospital, and Policy Factors Associated with Colorectal Cancer Survival: This project is exploring structural characteristics and personal characteristics that influence cancer treatment outcomes.
- Multivitamin-Multimineral Use in the United States in Middle-aged and Older Adults: This work is evaluating multivitamin supplement use on dietary adequacy and nutrient biomarkers.
- Racial and Ethnic Discordance in Person-level and Geographic-level Social Characteristics and Homicide Deaths: This work examines the contextual characteristics that influence cross-racial and cross-ethnic violence.